# MECCANO. Macazine

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GUARTERLY

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### INFLATION STRIKES!

WELL, GENTLEMEN – yes, and ladies, too – once again it is my sad duty to have to advise you that your Magazine has fallen victim to the continuing curse of inflation. We are teetering on the edge of the chasm of financial catastrophe, or, to put it less melodramatically, we are close to making a loss! In order to avoid actually moving into the 'red', therefore, we are being forced to increase the price of the MMQ, with immediate effect.

I hate to repeat myself, but, as I seem to remember pointing out before, the Magazine is published on a breakeven basis. We do not make any profit from it as the revenue received from subscriptions and advertising is just sufficient to cover the costs involved in producing and circulating the Magazine. The drawback to this, of course, is that, if costs rise, we have nothing in hand with which to absorb the rises and so we must counteract increased costs by increasing the price of the Magazine.

In practice, in fact, with help from the Company and by scrimping and saving, we have managed to do a certain amount of absorbing. The price of the MMQ was last increased exactly a year ago and I am sure you will have no difficulty in believing that, in the 12 months since then, our costs have steadily increased! In September last, for instance, the British G.P.O. saw fit to again raise postal charges — only six short months after the previous increase!

As you know, we did not pass this increase on to readers at that time, but I am afraid that now, as a result both of this postage increase and other rising costs, we have no alternative but to raise our price. Henceforth, therefore, the basic U.K. and Surface Mail subscription rate will be £1.40, with an appropriate increase in Air Mail rates, and the cover price of each Magazine will be 35 pence. The new rates will come into effect immediately for all new subscriptions and renewals, although, of course, existing subscriptions will be completed at the old rates.

Please believe, we genuinely regret the need to increase our rates, but even as I say this, I am sure that most readers will understand the situation. As many Meccanomen have kindly said in the past: "Better a price rise than the departure of the Magazine!" I am thus confident that we may count on your continued support.



A fascinated crowd at the N.W.M.G.'s. Clitheroe show.

#### CONGRATULATIONS!

On a happier note, congratulations are due to members of the North West Meccano Guild — and all who supported them — for the excellent and highly successful 1-day exhibition which they held at Clitheroe on 3rd. April. Our Assistant Editor visited the show for the MMQ and, at the time of writing, he has just returned, starry-eyed and full of praise for the outstanding quality, quantity and general presentation of the models exhibited. There was not time to include a report on the show in this issue, but we hope to be able to do so in July. In the meantime we would like to compliment all those involved, as well as thank the crowds of people who attended the show as paying visitros.

#### HENLEY

And, talking of Meccano shows, the giant, 2-day Annual Meccano Exhibition will be held at Henley-on-Thames, Oxfordshire, this year on Friday 3rd. and Saturday 4th. September. Friday will be a special enthusiasts' day to give exhibitors a chance to meet each other and see each others' masterpieces in comparative calm; on Saturday, the show will be open to the public. All Meccano modellers are invited to exhibit and anybody interested should contact the Exhibition sponsors, M.W. Models of Henley (see the advertisement inside this issue for details). Hope to see you there!

The Editor

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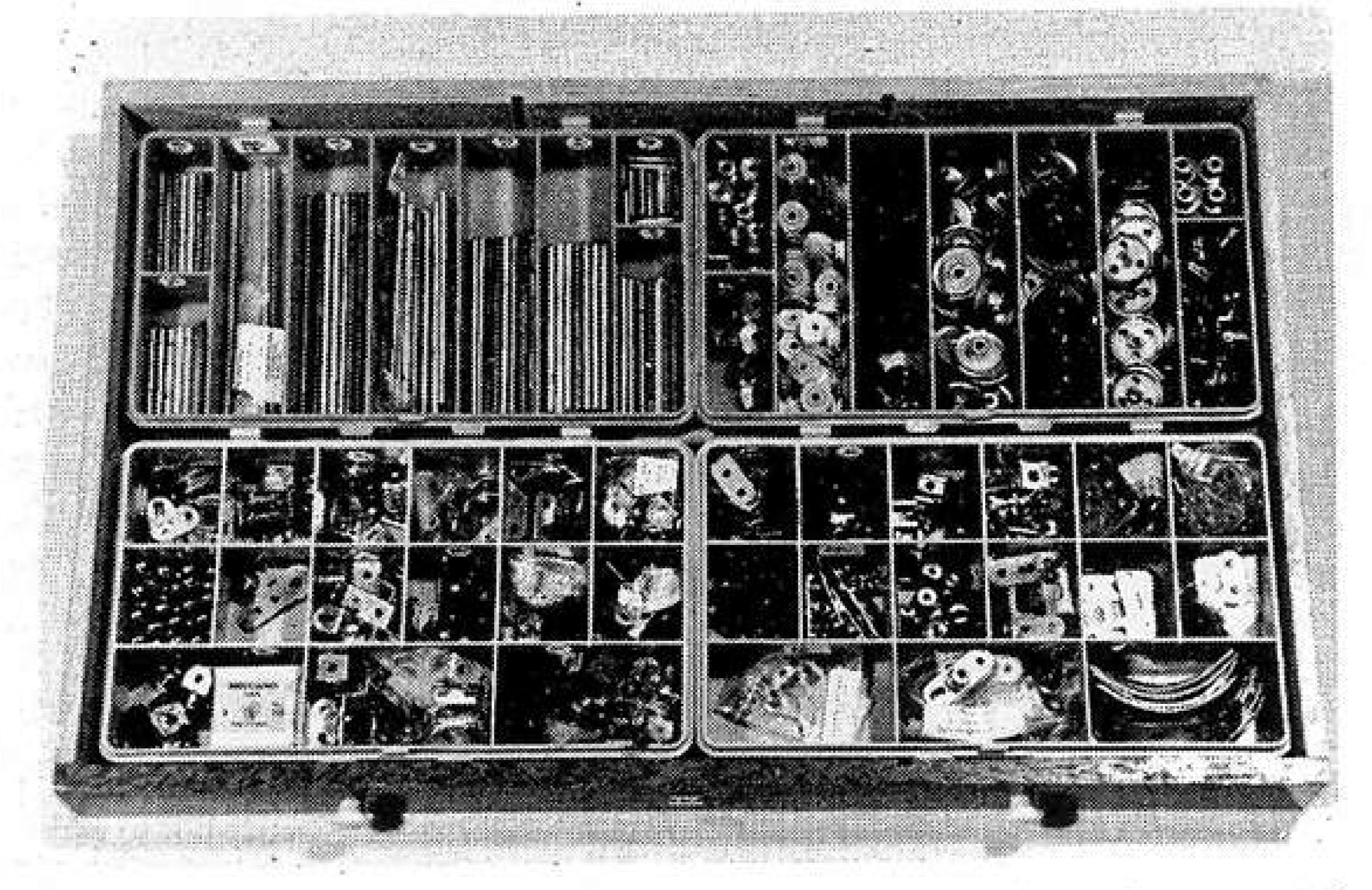
# MECCANO MISCELLANY

# MIKE NICHOLLS discusses matters of Meccano interest - and looks at a new club!

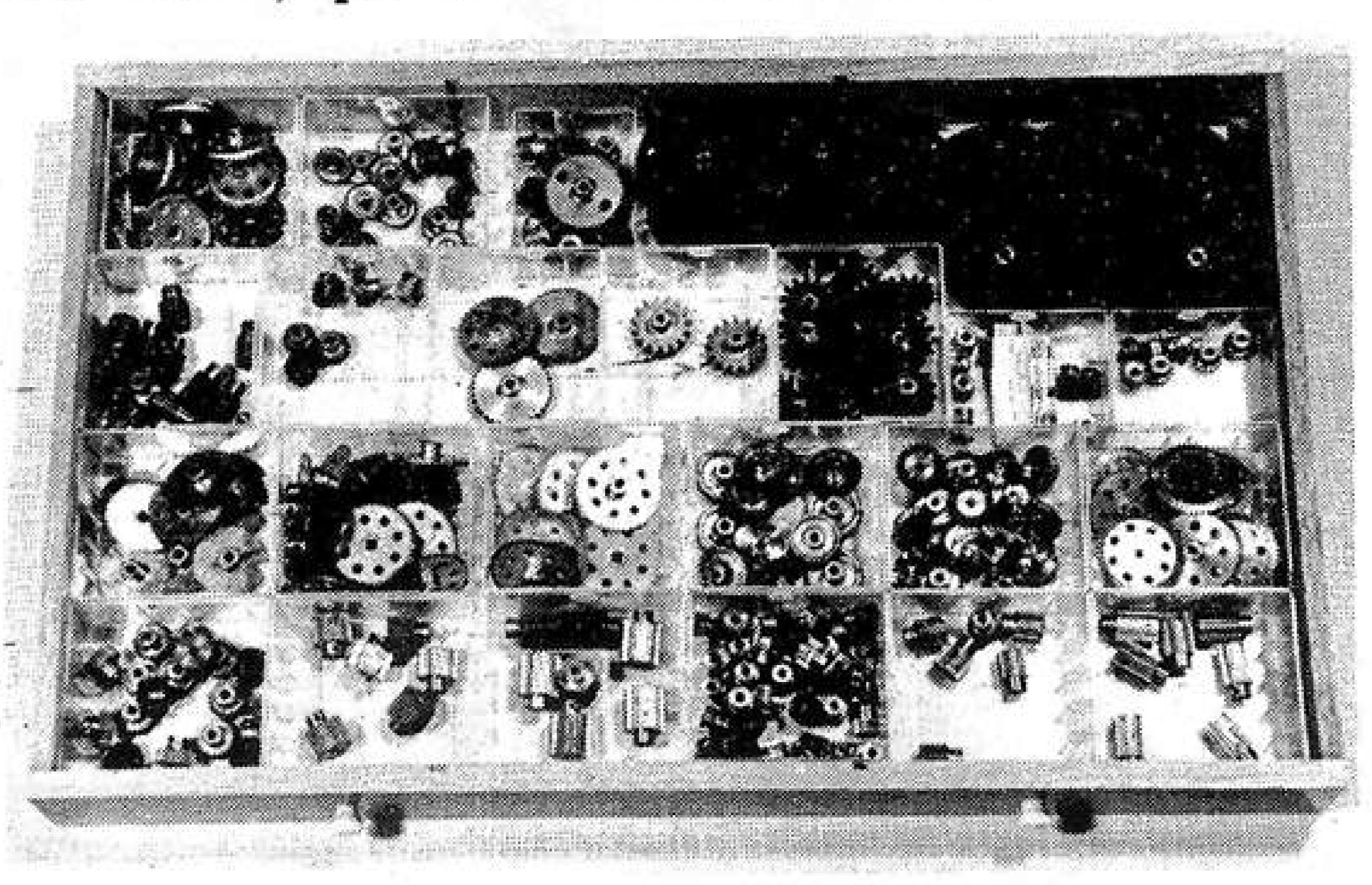
#### MORE ON STORAGE

IN THE LAST MISCELLANY, I outlined a method of storing Meccano parts in small filing cabinets; this time I would like to suggest a method of storing parts in No.10 Set Cabinets. I have found this method very successful, and as it requires no alteration or permanent attachment to the cabinet, it allows complete freedom to change the layout as the requirements of the modeller change. In fact, I have adopted two methods of storage in my 10 Set and Dealer's Cabinets, and I will outline the least complicated first.

The first problem in hand is to divide the insides of the drawers into useful small compartments to enable the separate storage of small components. I have seen several systems for achieving this goal, ranging from tobacco tins to gluing strips of wood to the insides of the drawers. The former system entails the removal of lids before the



Above, a No.10 Set cabinet drawer, showing the use of Efgeeco fishing tackle boxes for parts storage. Below, small plastic boxes serving a similar purpose for storing Gear Wheels, Sprocket Wheels, Pinions, etc.



parts can be brought to hand, but it is a much more farsighted system than the timber-and-glue method, because, as we all know, as soon as permanent divisions are provided for parts, the next model to be built will require many more of certain parts than can be accommodated when the model is dismantled!

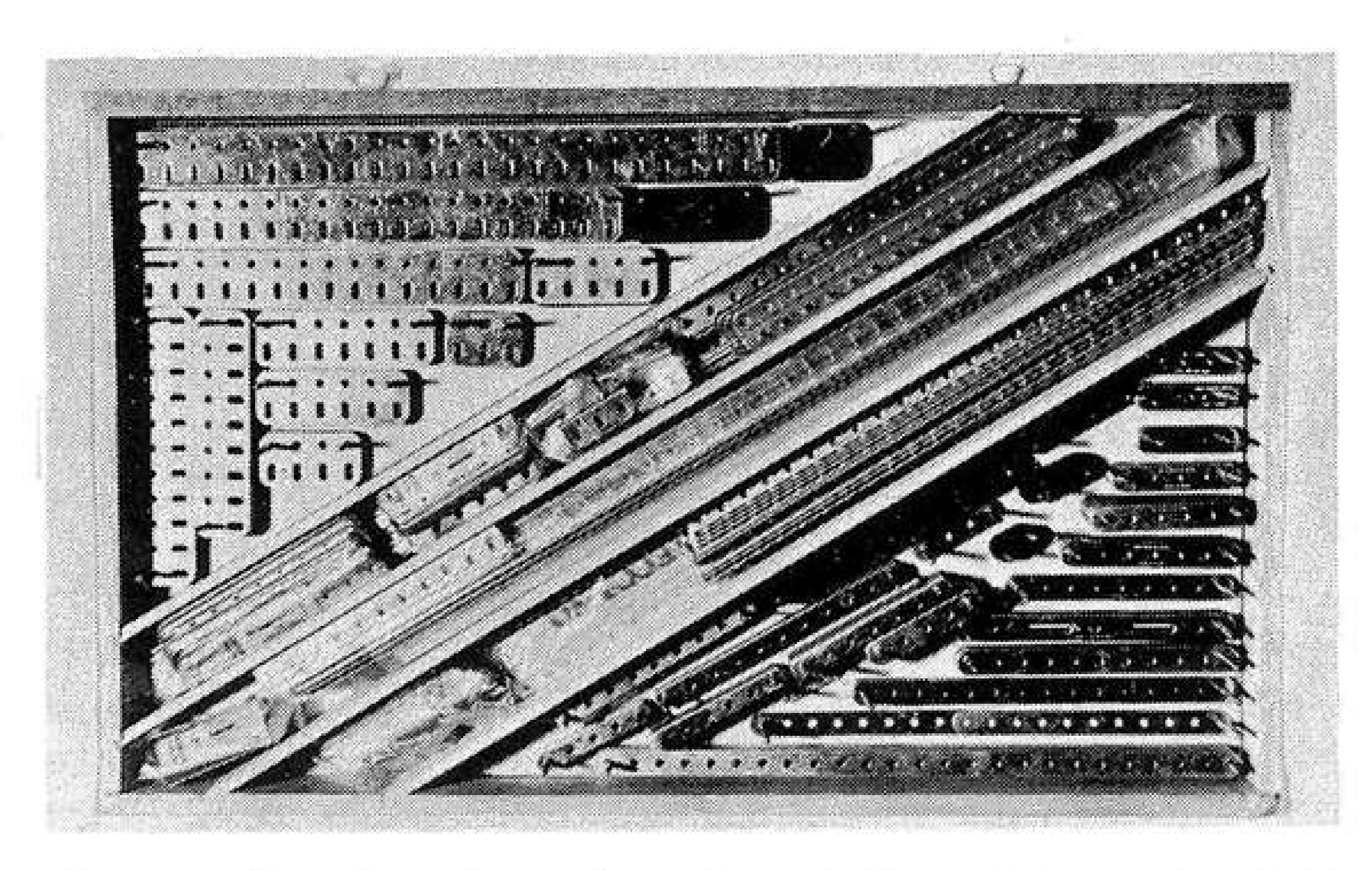
As with the filing cabinet method, I am not suggesting that my solution to the problem is a panacea for all Meccano enthusiasts, but it certainly provides the separate storage of small parts with the very minimum of alteration to the cabinet drawers.

Some years ago, I was looking for a way to store Meccano long Bolts, Grub Screws, etc. and, while passing a shop that sold fishing tackle, some plastic boxes in the window caught my eye. The boxes, made by Efgeeco, were available with various internal partitioning arrangements and transparent plastic lids. Thinking this the answer for which I had been searching, I bought two, and I was very glad that I did, for, on reaching home, I found that the box lids could be removed by withdrawing the hinge pins, and that the boxes were of such a size that four of them fitted exactly into a 10 Set Drawer! As often happens, while searching for the answer to one problem, I had discovered the answer to another — namely, how to divide a cabinet drawer into useful small compartments.

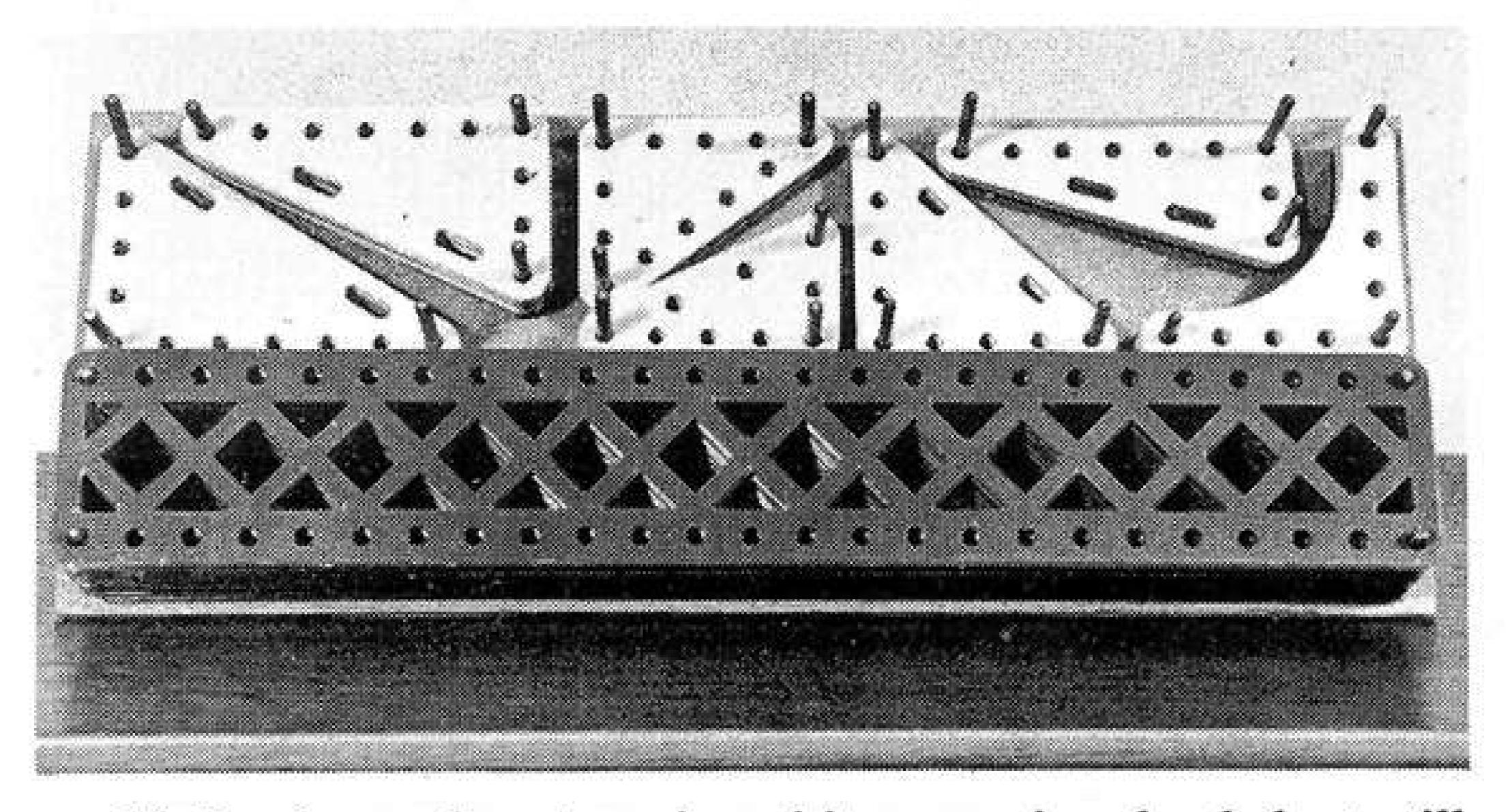
I can recommend this system as, after some years of use, I can find nothing wrong with it. To me it is the perfect way of storing small Pulleys, Axle Rods, Cranks, Couplings, and any of the other small Meccano parts. What is more, if all the various small Pulleys are in one box, this box can be withdrawn from the drawer when Pulleys are needed in a model. Similarly, all but the longest sizes of Axle Rod can be stored, all nicely segregated, in one of the boxes, and are immediately to hand when required. As one's stocks of, say, ½" Double Brackets grow, they can be moved to successively larger compartments, thus leaving smaller compartments free for smaller stocks.

All that is required by way of modification to the cabinet drawer is the removal of the original wooden partitioning, which is effected by unscrewing the woodscrews underneath the drawer, and sliding the partitions straight out. As with all seemingly 'perfect' systems, however, there is one drawback — what to do with all those beautiful transparent plastics box lids, which are much too-good to throw away!

One set of small parts that don't lend themselves to this system is Gears. In most of the lots of second-hand Meccano that I have seen, this noble range of indispensible parts have ended up all in one tin, usually labelled "Cogs!" As one of the illustrations shows, I have 'scaled-up' the fishing tackle box idea with small plastics boxes to provide quite a respectable 'nest' for my 'cogs'.



Above, the "hardboard and nails" method of parts storage. Below, one of the Hardboard panels removed, showing the carried parts in situ.



Method number two is a bit more involved, but still requires only the removal of the original drawer dividers; in fact you could leave them in if you wished. Strips, Flat Girders, Braced Girders, Plates and the like are the target for this particular assault, and the method is as follows:

First, cut a sheet of hardboard to such a size that it fits snugly into the drawer (or into the space between partitions). Now, lay out one of each type of part to be stored in that drawer on the hardboard, paying particular attention to making the best use of the available space. Next mark on the hardboard with a pencil the positions of suitable holes in the parts (the two end holes of Strips and the four corner holes of Plates). Now for the more difficult part: round nails of a suitable diameter should be purchased from an ironmonger, sawn off (at the pointed end!) to suitable lengths (bearing in mind that cabinet drawers are in two depths) and ground to what the Prima advertisements would call a "friendly shape". These nails are then passed through holes which have been drilled just small enough to give a retaining grip at the points marked out on the hardboard. You should now have something looking like a suitable bed for a nervous Indian fakir!

The assembled unit is fitted into the drawer and the parts stored on the 'posts'. One illustration shows my 'bottom drawer', in which I keep Strips, Flat Girders, and the longer Angle Girders. As can be seen, all lengths of Strips and Flat Girders are provided with their own pair of posts, and are thus immediately available for model-building. Other parts that may be stored this way are Flat and Flexible Plates, Triangular Flexible Plates, Braced Girders, Windmill Sails, Curved Strips and even Flanged Plates.

The beauty of the system is that, to change the arrangements, all that is needed is another piece of hard-board with holes in a different position. The cabinet

remains entirely unaffected, and you can lift out a particular section of the outfit (say the Triangular Flexible Plates) en masse for model-building. Just one thing though: choose nails that are a little thinner than Axle Rods, otherwise it could be a little difficult getting the parts on and off.

The drawback to this 'perfect' system is that you will find the shortening and rounding-off of the nails 'a bit of a grind'!

#### FULL OF TRIX!

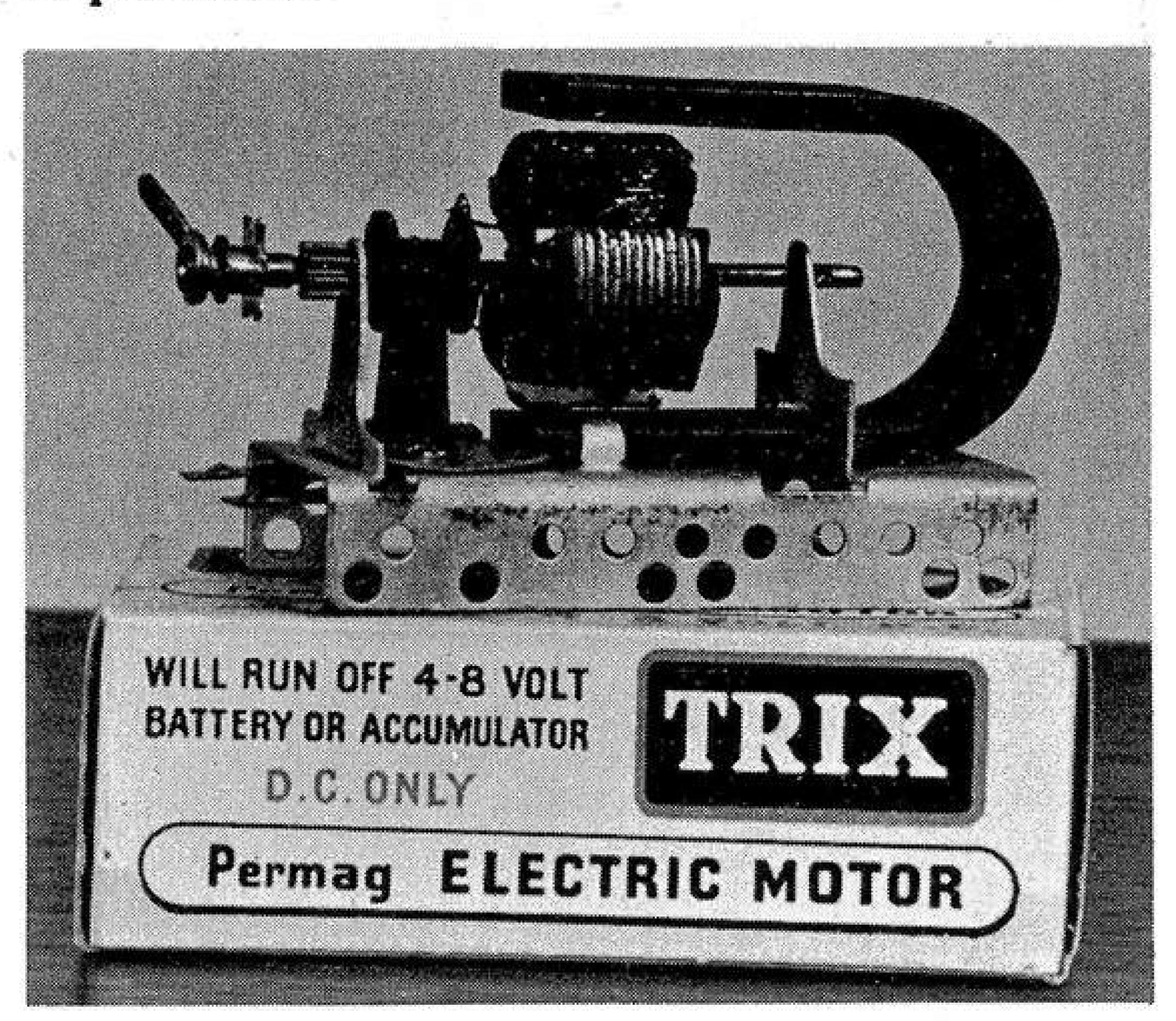
My next item deals with a mystery that has been puzzling me for some years, and it concerns that 'other system' — Trix — which I mentioned in my last "Miscellany". The picture shows the "Trix Permag Electric Motor" which was made in England during the 1950's by Trix Ltd. of Old Burlington Street, London. The motor was intended for use at 4-8 volts DC, and was, of course, marketed for use with the Trix constructional system. The puzzle is this — why did they perforate the base for use with Meccano? The top row of fixing holes are Trix diameter and pitch, but the lower holes are obviously intended for Meccano, being the right size and, if you take (counting from the left) holes 1,2,4 and 5 or holes 3 and 6, the right distance apart. If that's not proof enough, take that driving pinion on the output shaft — the Trix system did not include gears; gearing was achieved by meshing sprocket wheels, either in the same plane or at right angles, and to cap it all, that 8-tooth pinion on the motor has teeth of Meccano Gear pitch!

The inference is obvious, they intended to sell the Trix motor to Meccano enthusiasts — well, if you can't beat them, join them!

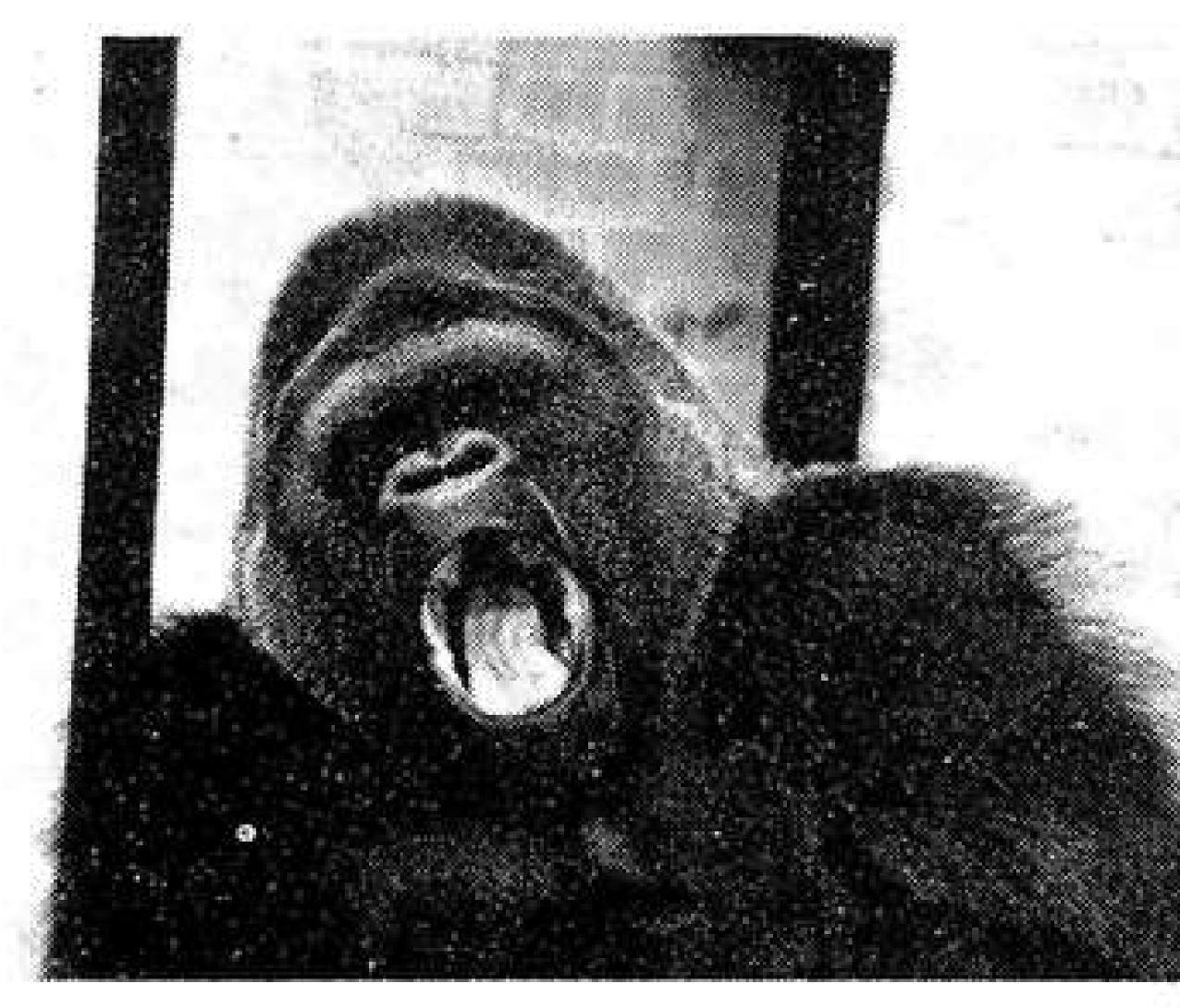
To finish on a serious note, my last item for this edition should really have appeared in "Meccano Club Roundup", but as space precluded this, the Editor has asked me to include this report in "Miscellany". It concerns a newlyformed club whose activities differ somewhat from those normally associated with our great hobby.

The Gumby Park Non-Meccano Club (GPNMC) held its inaugural meeting on the first of April last. New

Below, the TRIX (who said that word!) "Permag" Electric Motor, clearly showing its perforated base and its pinion drive.







Above, members of the "G.P.N.M.C." captured at the club's inaugural meeting. Left, (looking thoroughly bored) the club's President, Mr. G. O. Rilla!

members were given a warm welcome by their fellow new members and everyone soon got to know themselves. New member Mr. Ron Pamphlet gave a short talk about why he prefers "Constructoflex" to Meccano, during which his demonstration model fell apart several times due to the humidity of Grumby Park Free Trade Hall. As membership of GPNMC is open only to persons who have (a) never used Meccano, (b) never owned Meccano, or (c) never heard of Meccano, it is not surprising to learn that the word "Meccano" was not uttered once by anybody present during the meeting. The Club's President Mr. Pressard Bustitan-Blast gave a short 3-hour talk on something, which was followed by talks by members on the models that they were unable to make due to not owning any Meccano.

The highlight of the meeting was undoubtedly the slide show, entitled "The Colourful World of Small Pieces of Cardboard and Various Lengths of String" which was presented by Lady Justin Tyme. The meeting was drawn to a timely end at 4.30 a.m. when the police arrived. No firm date was fixed for the next meeting, but it was decided to hold it in the future. Unfortunately, space precludes detailed descriptions of all the models not brought by members, but I must mention that the President surprised everyone with the model he didn't bring, as it was the first perpetual motion mechanism.

(If you believe any of this item, you are invited to write for membership to the GPNMC Secretary whose address is in the telephone directory.)

# AT LONG LAST.

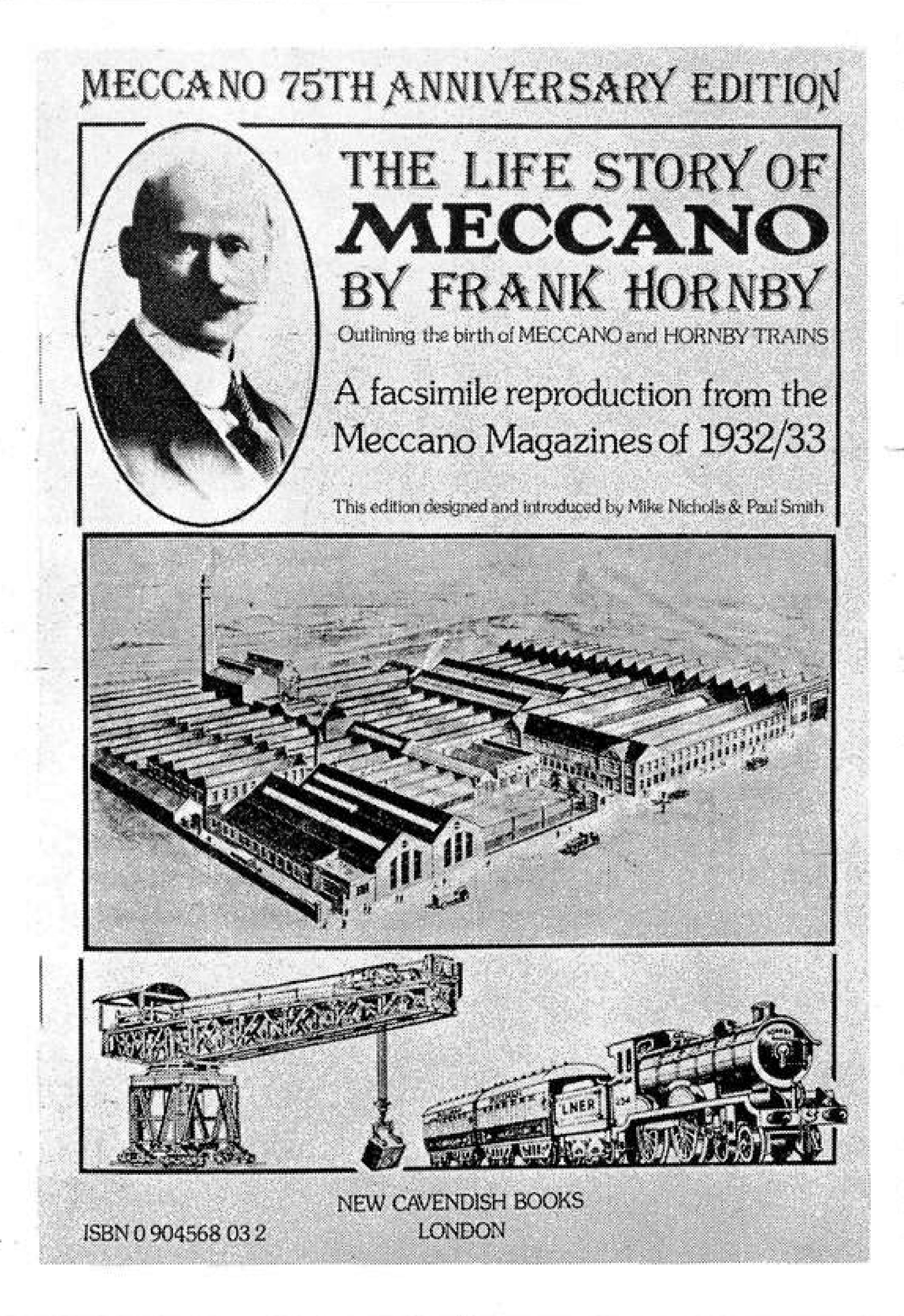
The scarcity of catalogued information on the subject of Meccano Limited's long-spanning, immensely interesting history, has been a sore point with Meccano enthusiasts for some time now! Being fully aware of the need — indeed demand — for such literature, Mike (Sir Gallahad!) Nicholls and Paul Smith of the Meccano Engineer have come to the rescue with an absorbing booklet entitled 'The Life Story Of Meccano By Frank Hornby', which is published by New Cavendish Books.

Of particular interest, is the fact that the story is in the words of the immortal Frank Hornby and, therefore, there is no deviation from the true facts. It is actually a a facsimile reproduction from the Meccano Magazines of 1932/3 in which the story first appeared, the quality of reproduction being outstanding and certainly doing justice to the contents.

Containing 30 pages, plus covers, the booklet is produced in an upright format measuring 11%" by 8%", which makes it slightly larger than the original M.M.'s from which the pages are taken. Quality gloss art paper is used throughout, with stiffer gloss paper being used for the covers.

Available at a cost of £1.50 from M.W. Models, 165 Reading Road, Henley-On-Thames, Oxon, and certain bookshops, the booklet is a limited edition (1100 copies) published to coincide with Meccano's 75th anniversary.

In our opinion, it is vital reading for all true Meccano historians, and is highly recommended.



# No.1 Set owners can build this appealing

# MULTI - PURPOSE TRAILER with RAMP

says 'Spanner'

FEATURED HERE is a new and remarkably appealing model which typifies the compact recovery trailers often towed by Land Rovers for bringing home crashed cars, or for taking competition cars to meetings. Similar trailers are also used for carrying cable drums and other industrial equipment. A winch is provided at the front end of the trailer for hauling the car or equipment on board, up a loading ramp at the back.

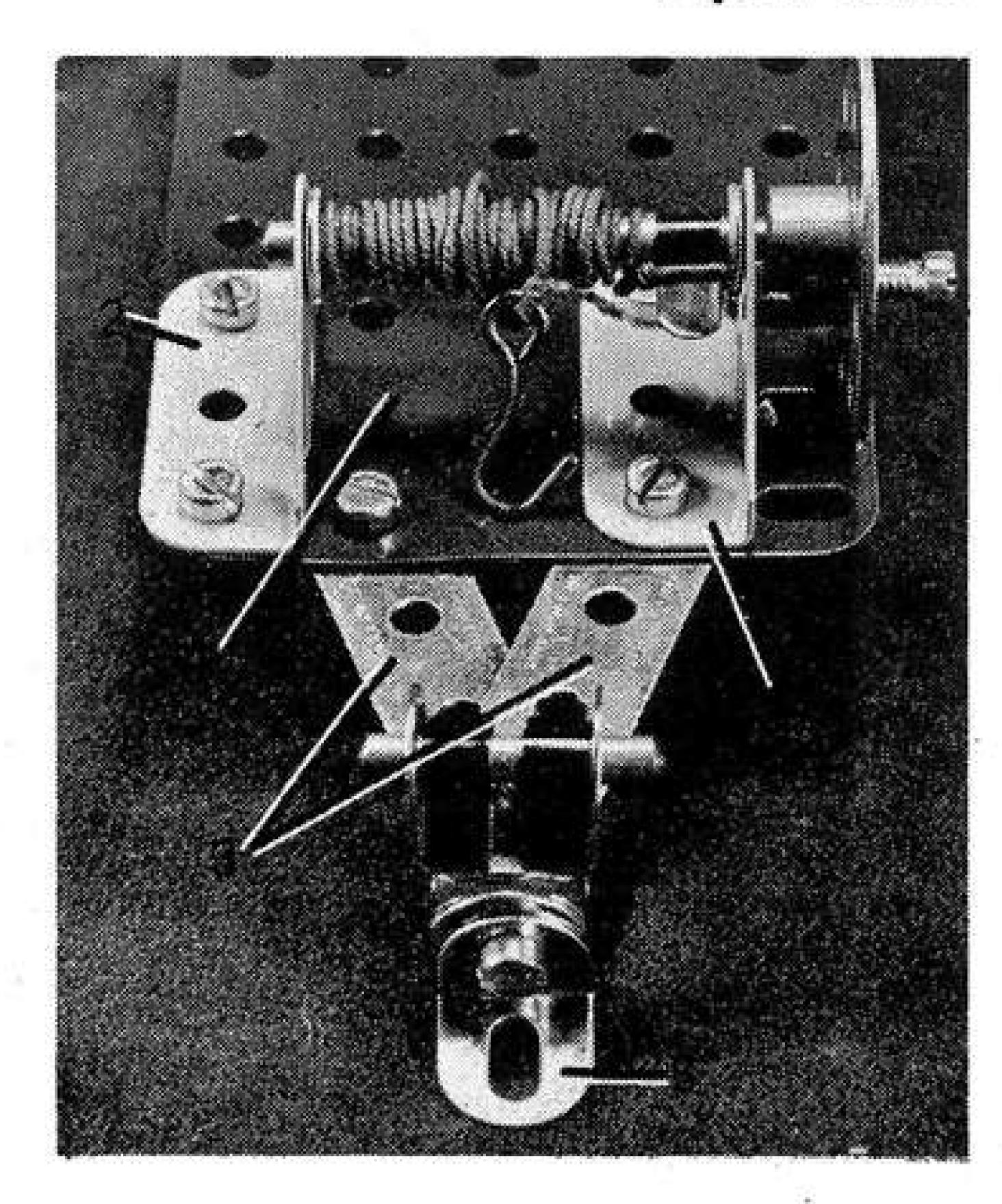
Construction is easy. The trailer consists of a 5½" x 2½" Flanged Plate, extended two holes forward at one end by a 2½" x 1½" Transparent Plastic Plate overlayed by a 2½" x 1½" Plastic Plate 1, the securing Bolts also fixing two Trunnions 2 in place as shown. Bolted to the underside of the Plastic Plates to extend three holes forward are two 2½" Strips 3 which are brought to a point and bolted together, along with a Double Bracket 4 above the Strips and an Angle Bracket beneath them. Bolted to the front lug of this Angle Bracket are another Angle Bracket 5 and one lug of a 2½" x ½" Double Angle Strip 6, the other lug of which is secured to the centre of the front flange of the Flanged Plate. Held by Spring Clips

in the lugs of Double Bracket 4 is a 1" Rod, serving as a lifting handle.

Journalled in the apex holes of Trunnions 2 is a 2" Rod, held in place by a Spring Clip and an 8-hole Bush Wheel 7, in one hole in the face of which a 3/8" Bolt is held by lock nuts. This assembly serves as the winch, therefore a length of Cord is secured to and wound round the Rod. Two Washers are carried on the Rod, one against each Trunnion, to serve as end flanges for the winch winding drum, while a Wire Hook is tied to the end of the winch Cord.

Wheels for the trailer are provided by two 1" Pulleys with Motor Tyres mounted on a 3½" Rod journalled in two 2½" Stepped Curved Strips bolted one to each side flange of the Flanged Plate. The securing Bolts also fix four Fishplates 8 in place, these serving as anchoring points for rope lashings over the load.

Equally simple in construction is the loading ramp, this consisting of four 5½" Strips 9, arranged with a half-inch gap in the centre, connected together by a 2½" x ½" Double Angle Strip 10, bolted through the Strips' second holes from one end, and by a



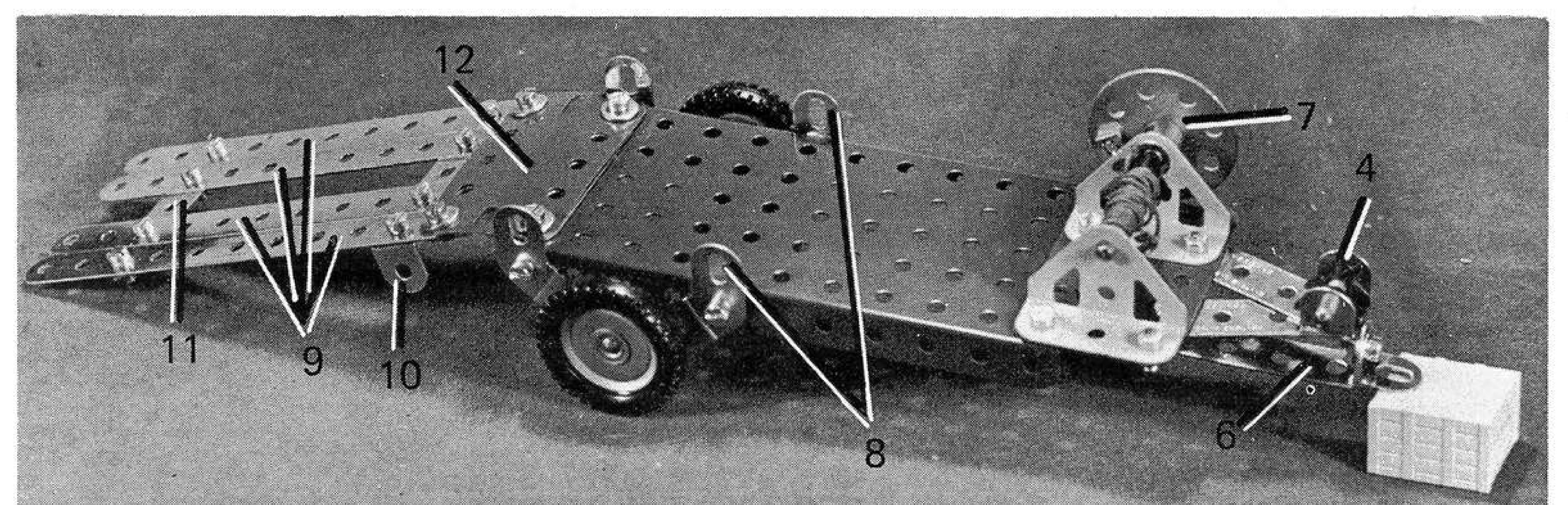
A close-up view of the winch and towing linkage.

2½" Strip 11 bolted through their third holes from the other end. The front ends of the Strips are sandwiched between, and bolted to, a 2½" x 1½" Plastic Plate 12 on top of a 2½" x 1½" Transparent Plastic Plate, both Plates being bolted to the back top of the Flanged Plate of the trailer. The ramp can of course be removed by simply undoing the Bolts which fix the Plastic Plates to the Flanged Plate.

This completes our model, but if a friend can build a jeep or Land Rover from Meccano, then you're all set for an action game!

	PARTS	REQUIRE	D
4- 2	1-17	24-37b	2- 90a
3- 5	1 - 18b	6-38	1-111c
4-10	2-22	1-40	2-126
1-11	1-24	2-48a	2-142c
2-12 1-16	3-35	1-52	2-193
1-16	26-37a	1-57d	2-194

A general view of the Multi-purpose Trailer described in this article. It is built from a No. 4 Set.



#### MECCANO

In the January MMQ I touched briefly on the whole aspect of filming Meccano models. Film-making covers a wide range of activities and calls on a number of widely differing skills. In the next few editions I hope to cover the subject more thoroughly. Let's say, the January article was meant to whet the appetite and to show that there are ways of keeping a record of your models, other than by still photographs and slides. In future articles I hope to deal with such aspects as putting movement into your models, close-up work, lighting, exposure, titling, and adding sound. Also I hope to show the way in which Meccano can be put to real practical use in making useful mechanical devices for film work. These include a roll film titler, camera panning head, psychedelic film machine, an automatic camera release timer for time-lapse photography and an animation rostrum. However, for this issue of MMQ let us consider some of the basics of making films of your models.

#### MOVEMENT

The essential quality of any film is movement. If you are not going to show movement, you may just as well have a set of colour slides — which incidentally would prove to be much cheaper, because you can leave a slide on the screen for minutes on end. On film, you, the film producer, regulate just how long each shot is seen by the audience. In making a film, remember that you are in complete command over the exact impression that your captive audience receives. By piecing together individual shots and viewpoints you can create an image that is either dynamic or relaxed; create tension or light-hearted frivolity.

Now, movement in filming can be created in several ways. In film-making circles, there is a maxim: "The subject should move, not the camera". Some models are, however, by their very nature, static. A model of a bridge is limited as to movement, unless it is a model of Tower Bridge, for example, or a transporter bridge. In these cases the model itself moves, although still only to a very limited extent. A model of a church or the Eiffel Tower is even more restricted in movement. The Eiffel Tower has lifts, but what movement can one find in a model church? In these cases of inanimate, or nearly inanimate subjects, it must be the camera that induces the movement.

Not all the shots will need to have movement. There is a place for some static shots, but movement will add more interest. There are several ways of inducing movement with the camera: we can scan the model from end to end, or from top to bottom, for one thing. This type of shot is called a "pan".

#### "PANS"

The most important thing about pans is that they should be carried out slowly and smoothly. A jerky, or fast pan will present a terribly blurred image on the screen, and you will fail to see the very details that you are trying to show. It is difficult to describe what the speed of a pan should be, but as a general rule it is best to allow for an average of 20 seconds duration. It could be anything from 10 to 40 seconds, depending on the size of the model and the resulting angle of sweep of the camera, but a duration of 20 seconds is a reasonable average.

Having executed a pan in one direction, avoid panning back in the opposite direction immediately afterwards. This is a common fault in beginners' films and is nicknamed "hosepiping", for reasons that are obvious when the film is eventually projected on the screen. It makes the audience dizzy and shows them nothing that they haven't already seen. It is far better to have one slow pan of 20 seconds duration rather than two faster pans of 10

## LET YOUR MODELS

\* \* \*

# The second article in our series on filming Meccano models by GEOFF PRATT

seconds duration each. The slower pan is clearer and shows more detail. After all, it is the details of your models that you want to show.

Ideally also, the pan should start and end on a point of interest. When filming a model of the Eiffel Tower for example, try starting the pan with a shot of the base of one leg. Pan upwards and end the pan with a view of the structure at the top and then hold this final shot for two or three seconds. Don't just stop filming when the camera has traversed halfway up the tower. This creates a feeling of incompleteness that is very disturbing to an audience.

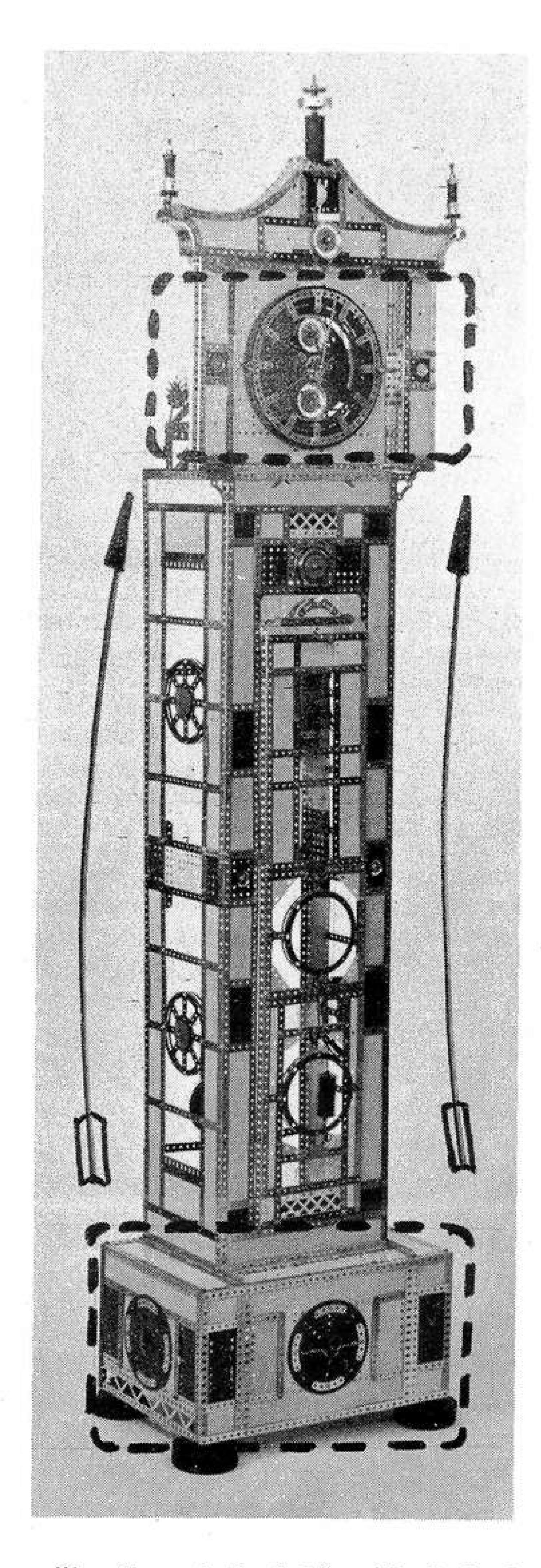
#### "ZOOMS"

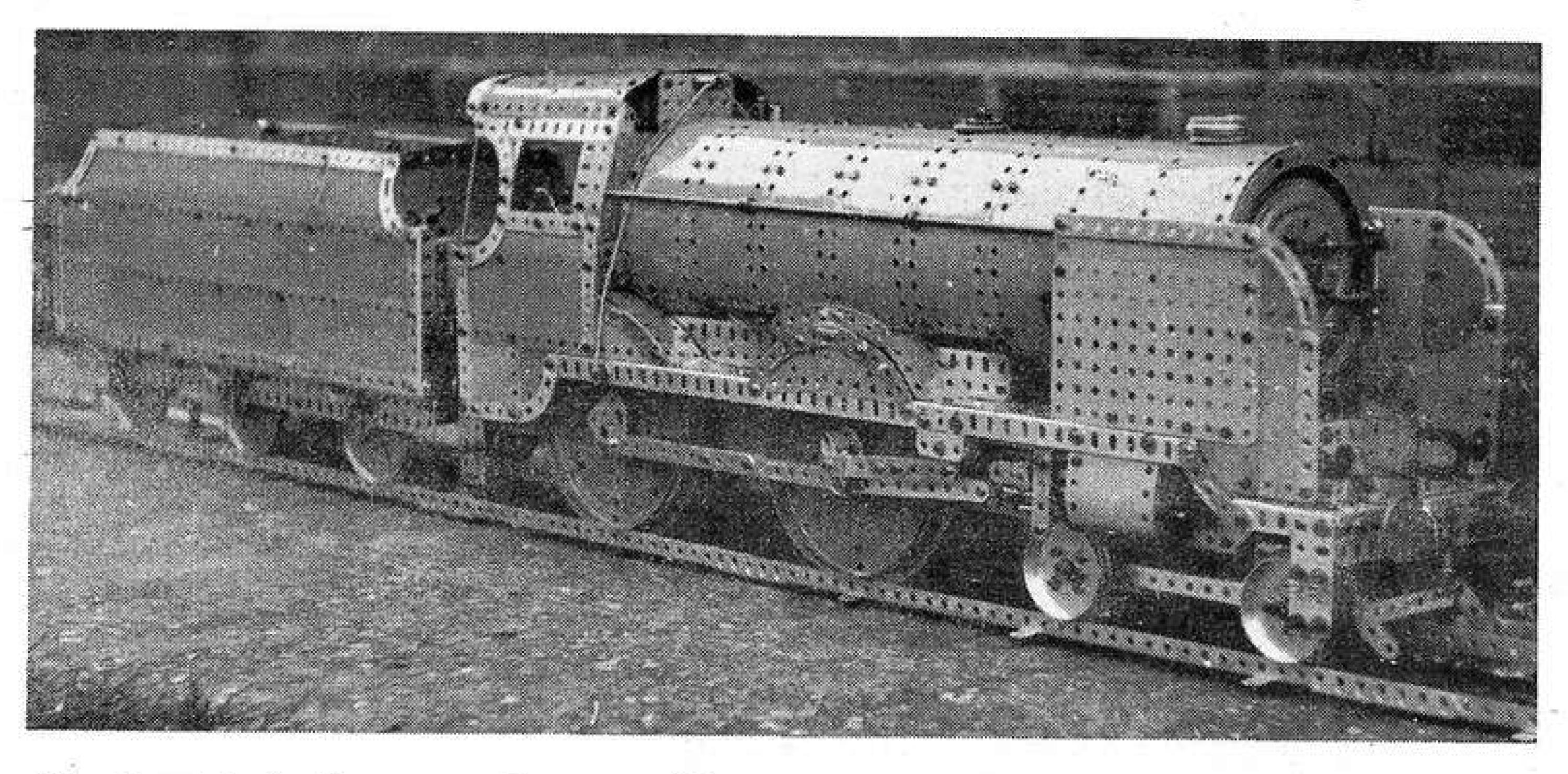
Another way of inducing movement is by the use of the zoom lens. "Zooming-in" is the term used when the camera appears to move in closer to the subject and is a technique much used on television. In actual fact, the camera remains stationary and the illusion of moving in closer is created by optical means, by an adjustment to the camera lens. The opposite to a zoom-in is a "zoom-out", where the camera appears to move back and away from the subject. Like the pan, the zoom should be carried out smoothly, but the speed of doing so depends upon the impression that you are trying to create. A slow zoom is the most useful for our purposes and, like the pan, it should begin and end showing something of interest.

The whole point about zooms and pans is that you, the cameraman, are guiding the viewers' eyes over the subject for them, showing them and emphasising the important points. If, at the end of a camera movement, there is no interesting viewpoint, then the audience will ask itself the question "Well, what is he trying to show me?" and the question will remain unanswered. Too many zooms and rapid zooms give a restless, energetic impression. This is alright for "Top of the Pops", but does little for Tower Bridge. So do be sparing and gentle with those zooms!

#### "TRACKING"

Yet another way of inducing movement is by actually moving the camera's position while filming. This is known as a "tracking shot" and is very effective. It has more impact than a zoom shot because it shows up the perspective of your model. In a film of, for example, a bridge, it would be very effective if the camera were to slowly move along under it and give the audience the view as though it was being filmed from a ship that was

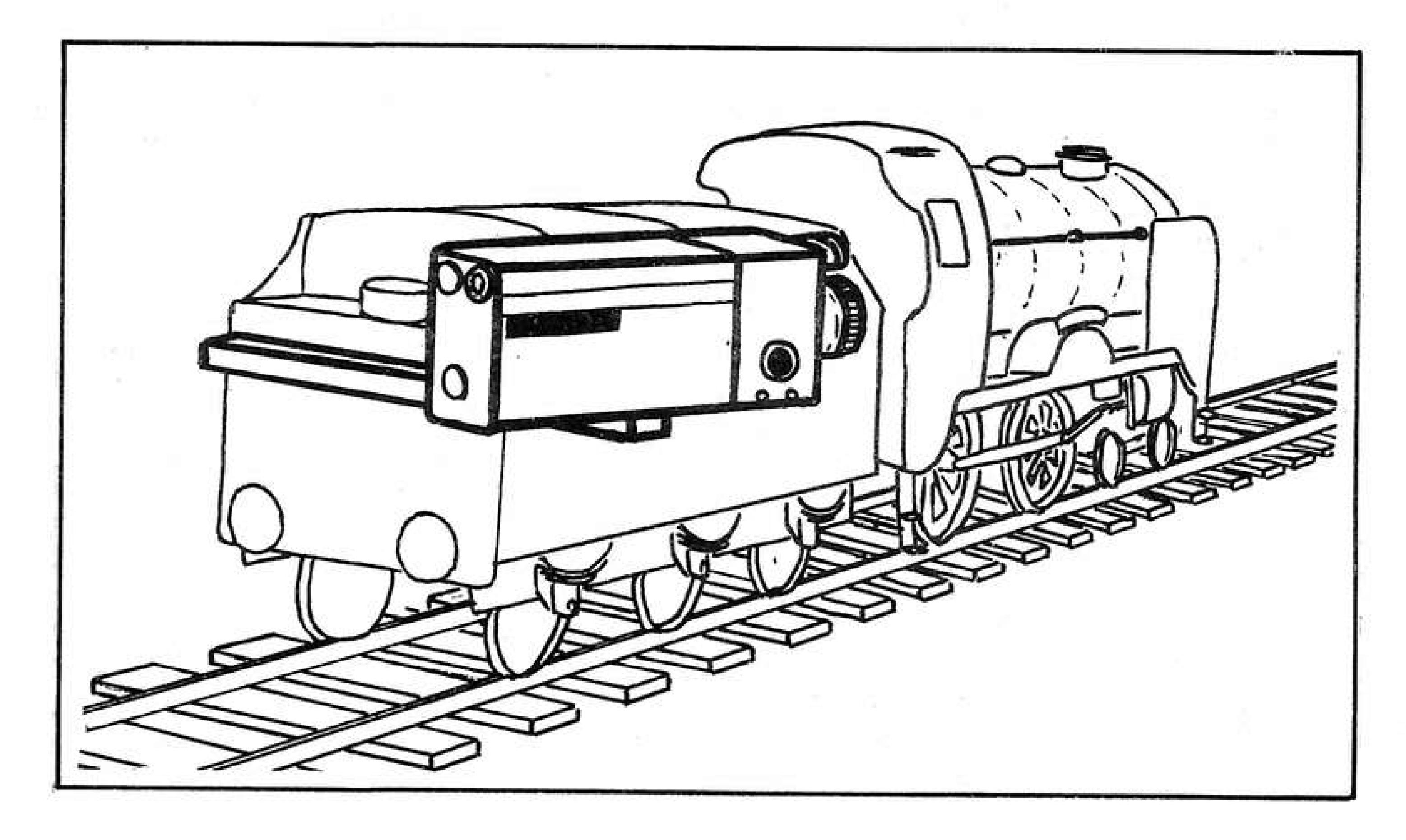




Ideal subjects for recording on film are models which incorporate plenty of movement — such as this No.10 Set 4-4-0 Locomotive and Tender, above.

Left, "Pan Shots" are useful for covering tall objects like this model of Bert Love's Grandfather Clock. The shot begins by showing the base in detail and then slowly pans upwards until the face of the Clock is shown.

Below, a sketch showing how, with a large model such as a Locomotive, the camera can be clamped to the model to allow a "tracking shot" to be taken while the model is actually running.



sailing through the bridge. Similarly, in a film of a locomotive in action, by clamping the camera to the tender and filming while the locomotive is running, the impression given is as of the driver's view from the cab.

#### WORKING MODELS

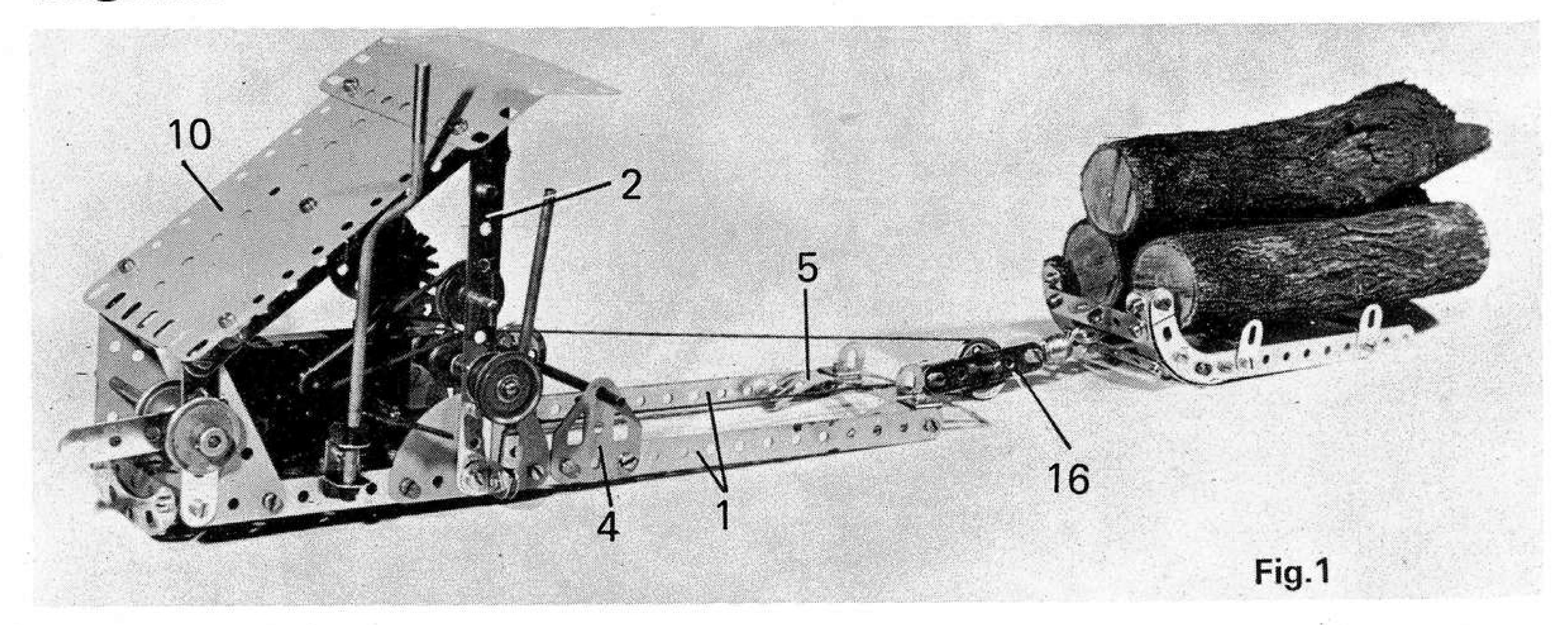
But the best source of movement is undoubtedly from the model itself and this is where Meccano really comes into its own. With the wealth of working models that can be built by modellers of all ages there is little difficulty in finding a suitable subject. By all means take a number of shots (including a few pans and zooms) of the model in a static pose, but then set it to work! I am a great believer in building models that will actually do the job for which their prototype was designed — albeit on a smaller scale of course! — so take that model excavator out into the garden or the sandpit and film it digging. If it is a model tank, let it climb obstacles on its way across the lawn.

By careful choice of camera position you can choose a location where the background is not distracting and is

free from such illusion-destroying realities as dustbins, garden sheds and brick walls! In certain cases it is advantageous to prepare a small setting of sand, stones, foliage and shrubs etc. so as to create an illusion of reality to set off your model. For the sake of younger readers I should point out that such activities as excavating the garden and building settings for filming the model should of course only be done after having obtained parents' approval. You can't expect your parents to be enthusiastic over your achievement in building a working excavator if you have just dug up the prize petunias!

In creating an atmosphere of realism, remote-operated models score heavily, of course, as the operator's hands do not enter the picture to destroy the illusion. However, full remote control can be very complicated and is best left to the really advanced modellers. For the purposes of filming it is not necessary, anyway, and there are other simpler ways of portraying a model without this complication. By operating one movement at a time, much realism

Continued on Page 54



# LOGGING WINCH AND SLED

## An interesting working model built from a No. 4 Set

HERE IS a new model for the No.4 Meccano Set which uses most of the parts in the outfit and provides a versatile model which may be operated in several forms. It is provided with a clutch mechanism allowing the winding barrel to be disengaged for return of the sled and hauling rope after unloading the logs. Similar winches are used in forestry work and also by hill farmers in Austria who even harvest their hay crops from the sides of the mountains by an almost identical system. The sled is detachable so that the model can be used as a general-purpose winch.

Fig.1 gives a general view of the complete model from which it can be seen that the winch house is stabilised by the two 12½" Strips 1 bolted to the side of the 5½" Flanged Plate which forms the main base of the machinery. These 12½" Strips are secured by twin thicknesses of Triangular Plates and a vertical 2½" Strip overlaid at the rear of the Flanged Plate and a Semi-circular Plate on each side towards the front. These give firm support for the 5½" vertical Strips 2 which act as the main bearings of all, of the mechanism, the Strips being set back three holes from the leading edge of the Flanged Plate. This permits a pair of 5½" Strips to take up the correct roofing slope and these are bolted to the front and rear vertical Strips as shown in Fig.3. Cross bracings for the front Strips is provided by the pair of Trunnions 3 bolted to the top of the Strips and joined by an overlaid 2½" Strip as shown in Fig.2, four Bolts being used for a rigid joint.

Immediately in front of the Semi-circular Plates, two Flat. Trunnions 4 are fixed to the 12½" Strips to act as journals for a 3½" Axle Rod. This is located internally by Spring Clips and allows a 1" loose Pulley to float freely on the Axle. The purpose of this Pulley is to provide extra power by running the hauling rope for an extra "leg" if required. One Fishplate, bolted top centre on the front of the Flanged Plate, forms an anchoring point for the cord in normal working of the model. A pair of Formed Slotted Strips 5, spaced by a 2½" Strip, makes "spreaders" at the front of the winch frame and are secured to the extreme ends of the 12½" Strips by Reversed Angle Brackets, the exposed vertical lugs forming rope guides for hauling cord.

#### MECHANISM

This must be assembled carefully for best results. Choose your best 3" Axle Rod, see that it is in clean

condition and fit it with a Bush Wheel at one end boss inwards and then add a Washer. Pass the Rod through the middle hole of the far side 5½" vertical Strip, add another Washer and a Multi-purpose Gear Wheel. Slide on a 1" fixed Pulley Wheel 6 and then lock the Grub Screws in the Bush Wheel and Gear Wheel without any sign of binding against the Washers and 5½" Strip. Bosses of the Pulley and Gear Wheel point to the far side of the model. Mount the Magic Motor by two Bolts through its base lugs on the outer near-side row of holes in the Flanged Plate, three holes in from the rear of the Plate. Connect a 6" Light Driving Band from the motor pulley to the 1" Pulley on the 3½" Axle Rod and try the drive. Adjust the 1" Pulley for correct alignment and then tighten its Grub Screw. The Driving Band must not be tight. If it is, try a domestic rubber band (a thin one!) The original model uses a standard Meccano Band and it works perfectly.

The 4" Axle Rod is the combined winch and clutch shaft. Again, check that it is clean and straight. Assembly is as follows. Take the Cord Anchoring Spring and a piece of rag to protect the fingers. Wind on the Spring until its leading plain edge is 1 1/8" on the Rod. Pass the Rod through the nearside vertical 5½" Strip four holes up then add a Washer, a Spring Clip and a 34" Washer free on the shaft. The large Washer forms one end of the winding barrel and will find its own location against the Spring Clip. Now put on the Bush Wheel, boss outwards, followed by the other Multi-purpose Gear Wheel 7, also boss outwards. Add a Washer and pass the Rod on through the other 5½" Strip. Do not tighten any screws until assembly is rechecked, Now, pull back the 4" Axle Rod until only 1/8" of it protudes beyond the far 5½" Strip. Now push the Spring Clip hard against its small Washer to bear on the inside of the near 5½" Strip which will then set the Winding shaft in its "de-clutch" position. Now tighten the Grub Screw in the Multi-purpose Gear Wheel, but make sure that this second Gear Wheel is out of mesh from the one above it by just about 1/16" clearance.

Now try settings by sliding the 4" Rod to and fro, making sure that, pushed inwards, the Rod ensures perfect mesh of the two Gear Wheels and, pulled out, it gives clear disengagement. Set the Bush Wheel boss hard up to the Gear and attach the Hank of Cord by a simple overhand knot round the Axle Rod and then by tying the cord through two holes of the Bush Wheel. Wind up the Motor and try it for smooth wind-on of the cord, layering it backwards and forwards between the Bush Wheel and the 34" Washer. If there is any stiffness or binding, adjust Grub Screws and Washers, then put the slightest trace of good sewing machine oil on all bearings.

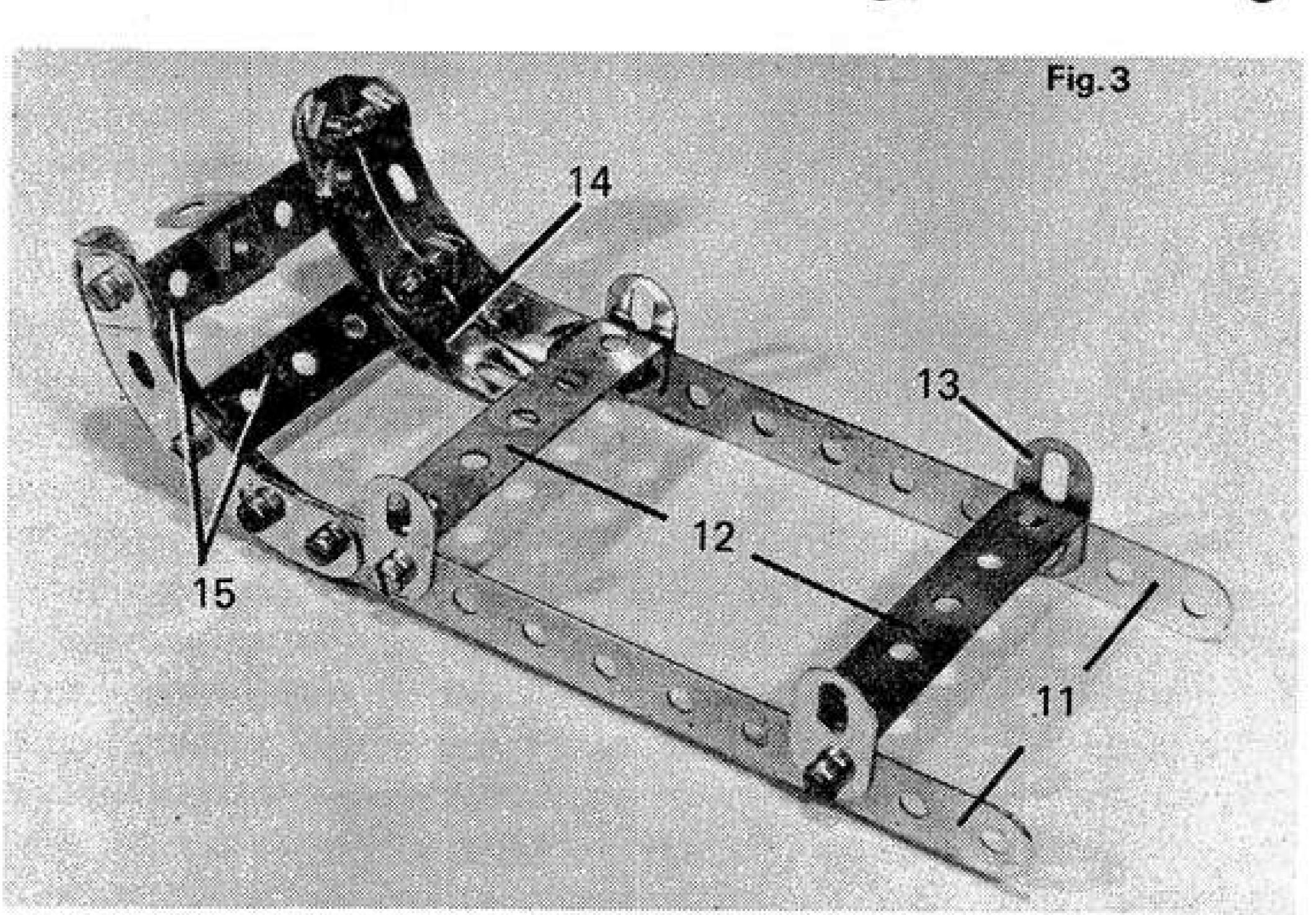
The second 4" Axle Rod 8 is used as a clutch lever and this is secured via a Rod & Strip Connector by a lock-nutted Bolt to the slot of an Angle Bracket bolted to the bottom centre of the nearside Semi-circular Plate. The lock-nutting should be firm to give positive location of the clutch lever in either position. Put the second 34" Washer on the winding shaft against the eye of the Cord Anchoring Spring and set the clutch lever very close to, but not quite touching the winding shaft. Place the 1" Pulley on the outer end of the shaft, boss inwards, to leave a gap of just over 34" in which the clutch lever can move.

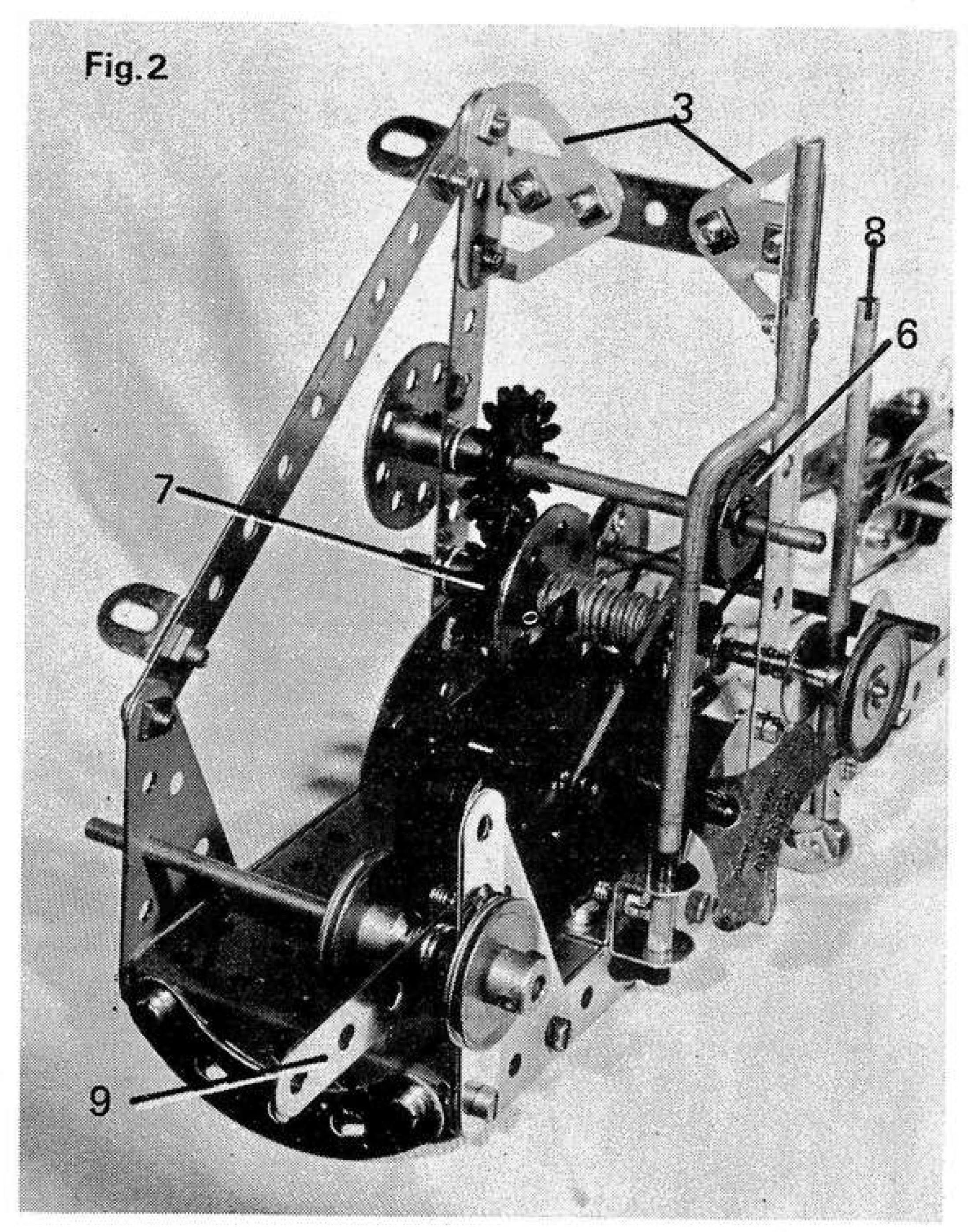
In building the brake lever, fix a 3/8" Bolt with a lock nut in one end of a 2½" Strip 9. Now attach a 1" Pulley, boss outwards, to the remaining 3½" Axle Rod and pass it through the rear supporting strips of the winch housing three holes up. Place a Washer on the Rod followed by the 2½" Strip and locate the fixed Bolt shank in the hole of the Magic Motor brake lever. Next to the 2½" Strip put the ½" loose Pulley on the shaft followed by another 1" fixed Pulley, but do not tighten for the moment. Now fix a Spring Clip on the 3½" Rod just inside the supporting Triangular Plates to space 2½" Strip 9 the right amount. Finally tighten the second 1" fixed Pulley fairly firmly against the ½" loose Pulley to give a firm support to the brake lever.

#### ROOF

For the roof, a pair of  $5\frac{1}{2}$ " x  $2\frac{1}{2}$ " Flexible Plates 10 are lapped-over three holes and bolted to four Angle brackets attached to the  $5\frac{1}{2}$ " Strips forming the roof supports. A  $4\frac{1}{2}$ " x  $2\frac{1}{2}$ " Flexible Plate is used to extend the roof forward. If this already has a bend from a previous

The logging Sled. In our heading shot, opposite page, the Sled is shown with a load of 'logs' cut from twigs.



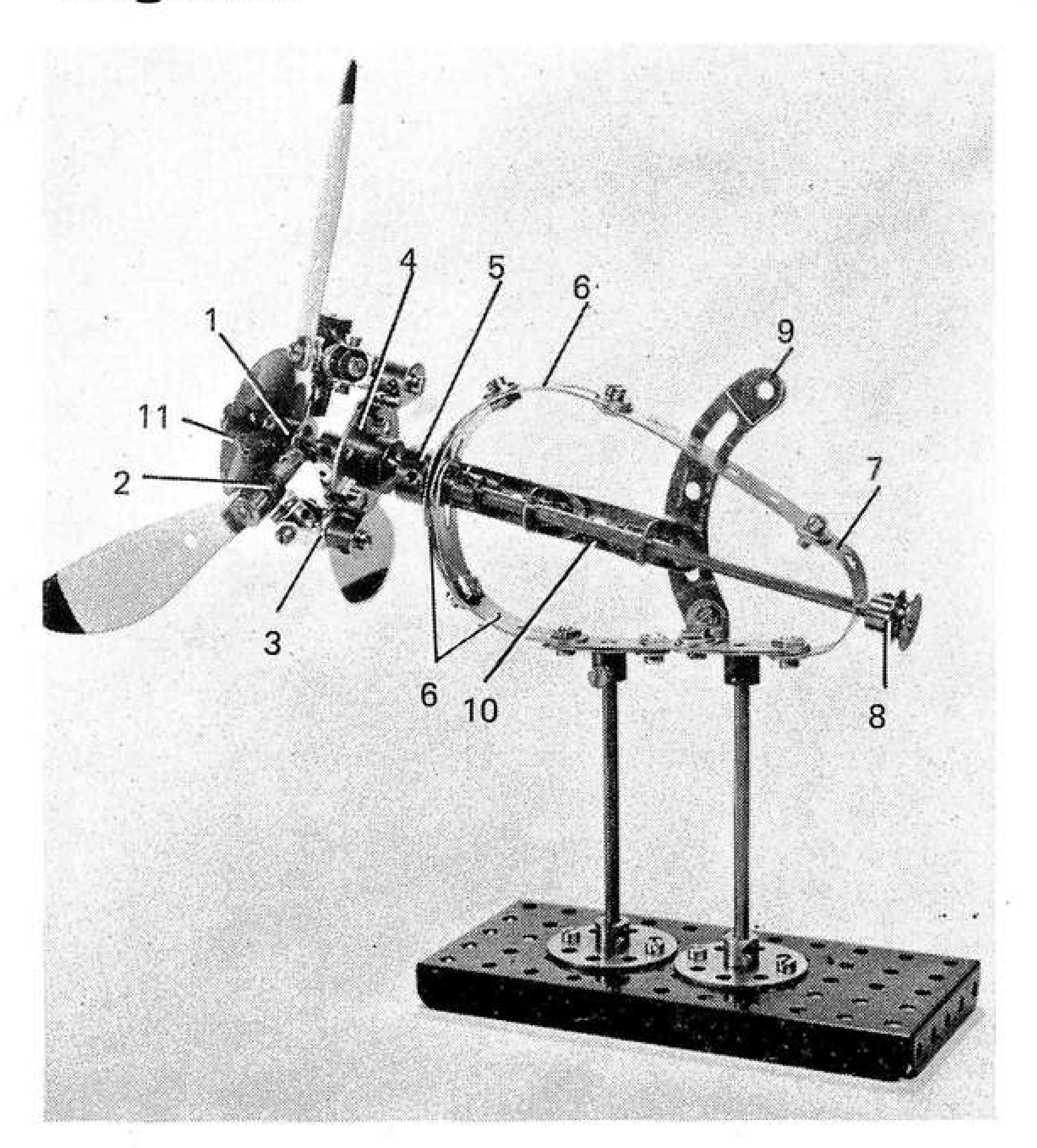


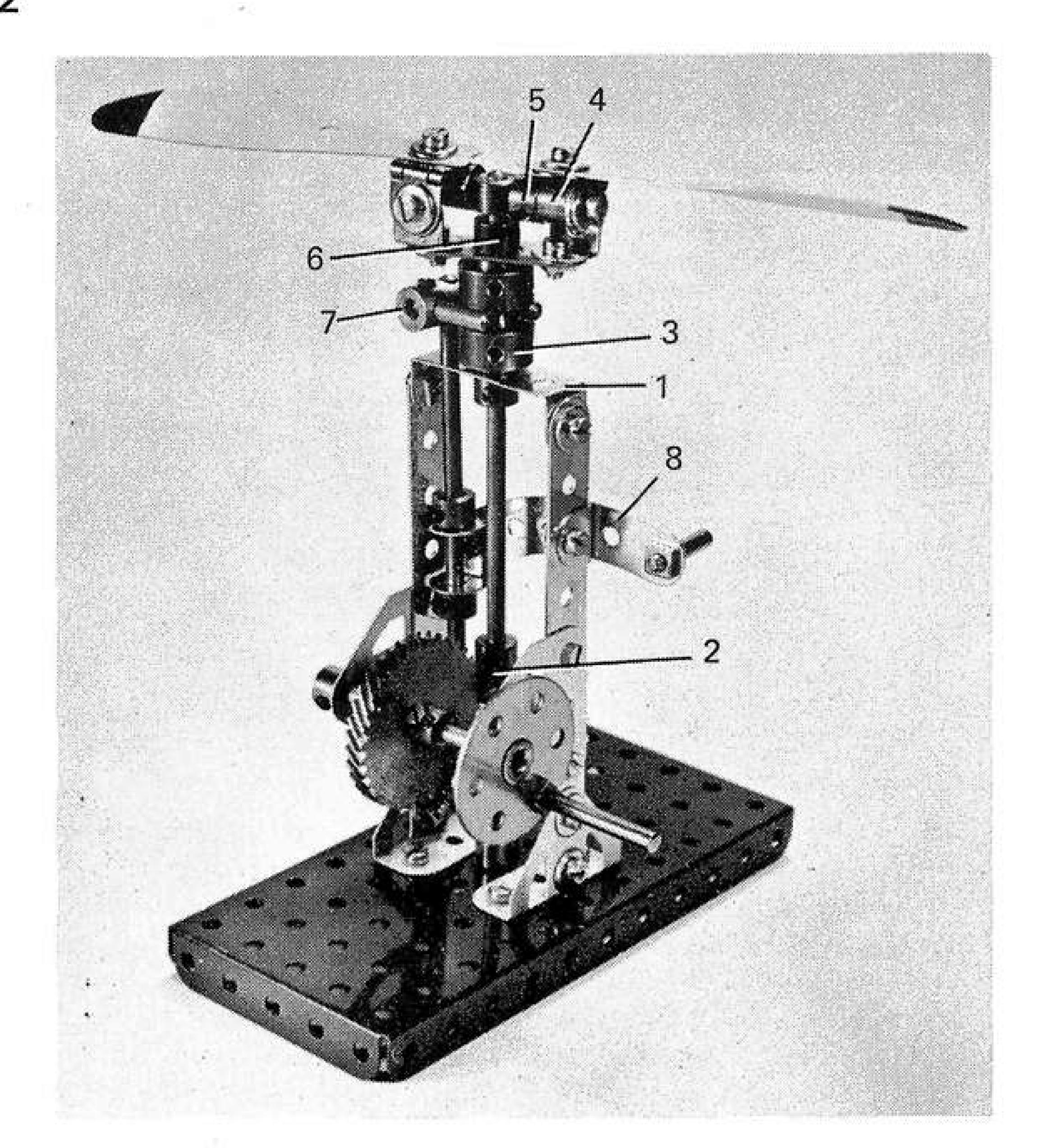
A close-up view of the Logging Winch with the roof removed. The 2½" Stepped Curved Strip at the back acts as a 'spade' to prevent the Winch moving under load.

model-making session it can be set at an angle as shown, or left perfectly straight. An exhaust pipe for the "diesel" engine (Magic Motor) adds the finishing touch. The remaining Double Bracket is bolted to the last Angle Bracket which is in turn fixed to the fifth hole along on the top edge of the Flanged Plate. Take the Crank Handle and fit it at the top with the Rod Connector. Fix the lower end of the handle in the Double Bracket with Spring Clips. Now you are all set to build the logging sled.

#### SLED WITH PULLEY BLOCK

To make the Sled, join up two 5½" Strips 11 with a pair of 2½" Double Angle Strips 12, placing a Fishplate 13 outside at each Bolt. These Bolts are set-in three holes from either end of the 5½" Strips. The purpose of the Fishplates is to provide lashing anchorages for the logs. A pair of 2½" Curved Strips are bolted to the first two holes of the 5½" Strips to form the Sled front and forward runners are provided by two Formed Slotted Strips 14. These are attached by four Angle Brackets to the Curved Strips as shown. Cross bracing is provided by a pair of 2½" Strips 15 bolted between the formed Slotted Strips. The upper Strip is bolted one hole down (actually in the lower end of the slot) and carries a Double Bracket at its centre for the towing shackle. No attempt should be made to place any more Nuts and Bolts at the lower end of the Formed Slotted Strips as these must present a smooth unobstructed surface to the "ground" over which the sled is to be hauled. We now have a simple, but strong, sled which will glide with very little friction over a suitable surface.





# AMONG THE MODEL-BUILDERS

## with "Spanner"

ANDREAS KONKOLY, of Budapest, Hungary, has been at it again! (Model-designing, I mean!)

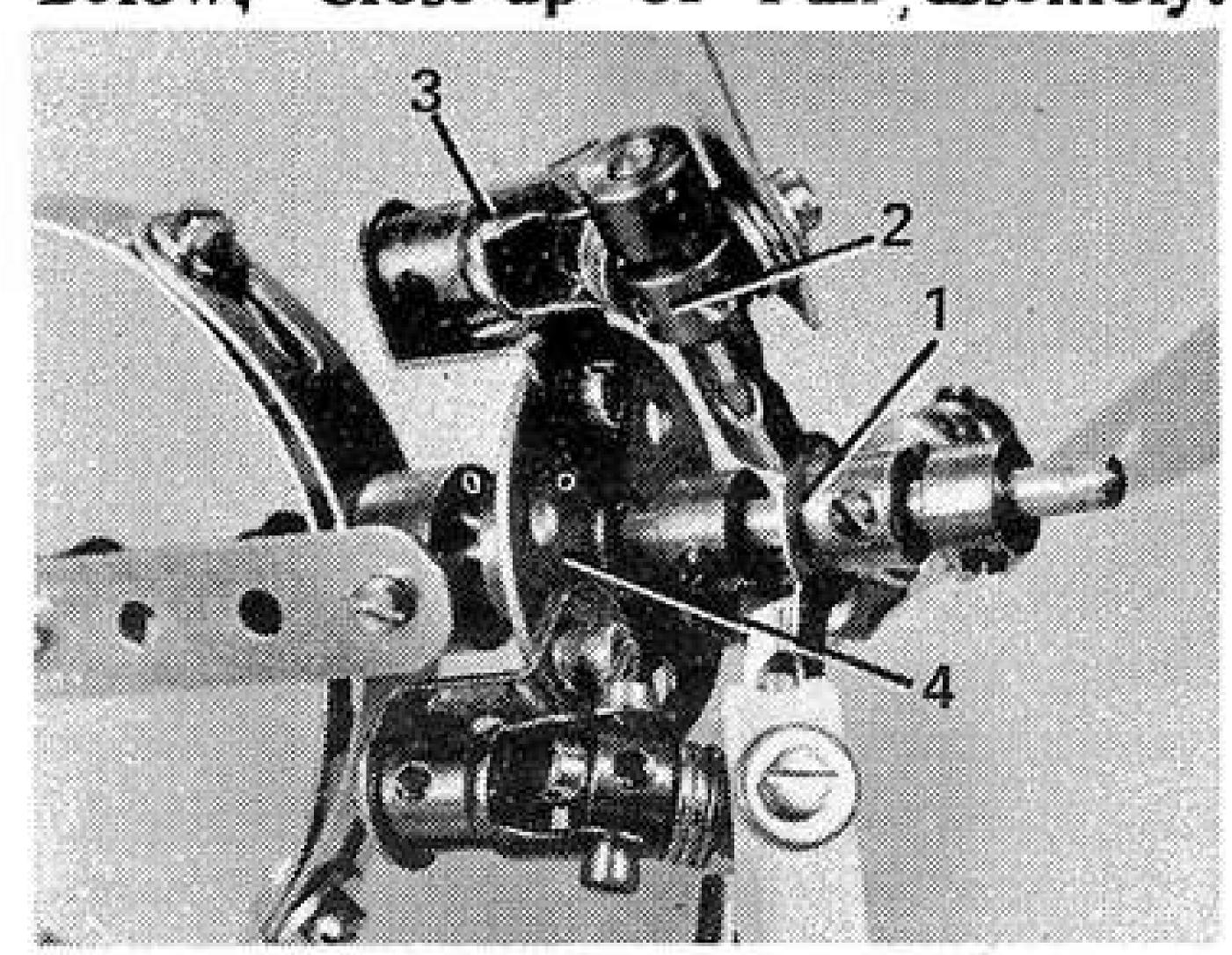
Andreas is perhaps best-known for his excellent Meccanograph pattern-drawing machines — and he has actually supplied us with details of a new Meccanograph to be featured in a later MMQ — but his talents are not limited exclusively to this type of model. On the contrary, he has produced a whole variety of different models and mechanisms in his time, and I kick off my column this issue with a couple of interesting units which illustrate this difference.

The first, produced, perhaps, in anticipation of another long, hot summer, is what Andreas calls a "Variable Ventilator", i.e. a Fan, the angle of the blades of which can be altered to vary the strength of the wind' created. It is built up from an 8" Rod on which is fixed a 3-way Rod Connector 1, in each arm of which a 1" Rod is held. Loose on each of these Rods is a 4-hole Collar 2, to which a Propeller Blade is bolted, spacing Washers being used to ensure that the fixing Bolt does not grip the 1" Rod. An ordinary Collar holds Collar 2 on the Rod. An End Bearing

3 is also secured to each Collar 2 by a 3/8" Bolt passed through the Collar of the End Bearing, fitted with spacing Washers and screwed into one bore of Collar 2. The Washers are again necessary to prevent the Bolt locking the Collar on the 1" Rod, while ensuring that the End Bearing is tightly fixed to the Collar. Each End Bearing is itself secured to a Reversed Angle Bracket bolted to a 6-hole Bush Wheel 4.

The Bush Wheel is free on the Rod, but its boss is fixed in one end of a Socket Coupling 5, also loose on the

Above, a Variable Fan (left) and a Variable Propeller (right) designed by Mr. Andreas Konkoly of Budapest, Below, Close-up of Fan assembly.



Rod. The Rod is journalled in an assembly built up from three Formed Slotted Strips 6, arranged as shown and extended rearwards by two 3" Strips connected together by a 2½" Strip 7, curved to shape. A Collar behind the Formed Slotted Strips and a ½" Pulley with boss 8 on the end of the Rod hold the Rod in place.

Lock-nutted to an Angle Bracket bolted to the lower 3" Strip in the frame is a 3" Stepped Curved Strip 9, to the lower slotted hole of which a 3½" Strip 10, is pivotally connected. The forward end of this Strip is connected to Socket Coupling 5, while the 8" Rod passes through two Angle Brackets bolted to the Strip. Movement of the Stepped Curved Strip alters the angle of the Propeller Blades, thus varying the amount of "blow" they raise.

A touch of streamlining is added to the model by a Conical Disc 11 held by Collars on the front end of the 8" Rod. A stand for the unit is also provided by a 5½ x 2½" Flanged Plate, to which two 8-hole Bush Wheels are bolted. Held in these Bush Wheels are Rods, on the upper ends of which two Double Arm Cranks are fixed, these Cranks being

bolted to the underside of the lower 3" Strip in the unit frame. A suitable motor should be bolted to the Flanged Plate and connected to Pulley 8 by a Driving Band, but the following parts list applies only to the unit as illustrated.

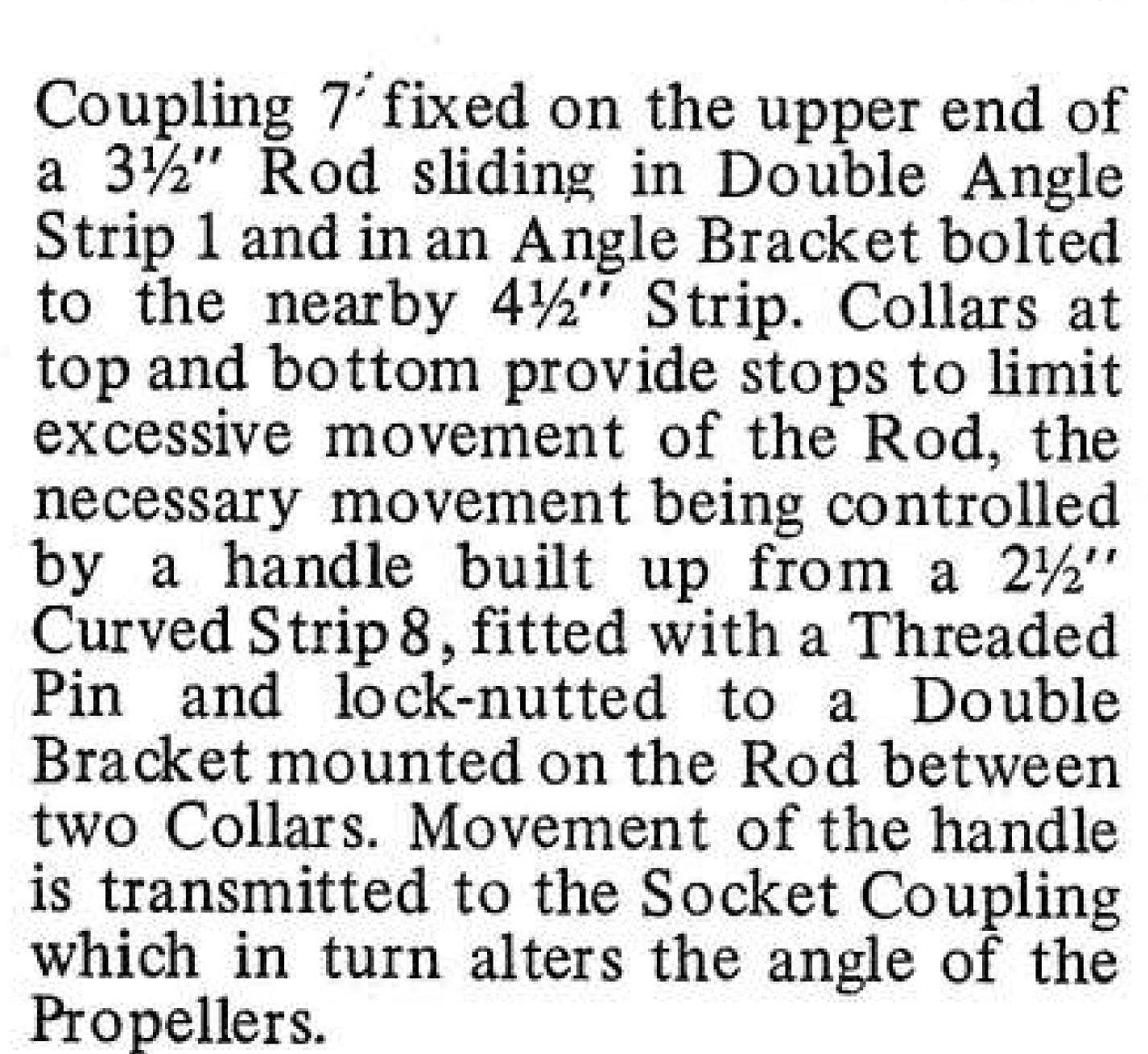
	PARTS	REQUIRI	ED.
1- 3 2- 4 1- 5	1-23b 2-24 1-24b	1- 52 7- 59 2- 62b	3-140y 3-165 1-171
3-12 1-13a 2-16 3-18b	25-37b 20-37c 29-38 3-41	1- 90a 3-111a	1-187a 1-213b 3-215

#### VARIABLE PROPELLER

Mr. Konkoly's second mechanism is a variation on the same theme as his first offering, being a 2-way Variable Propeller Mechanism. In the demonstration unit illustrated, a supporting framework is supplied by two 4½" Strips, connected together at the top by a 1½" x ½" Double Angle Strip 1 and attached at the bottom, by Trunnions, to a 5½" x 2½" Flanged Plate. Journalled in the Flanged Plate and in the centre hole of the Double Angle Strip is a 6½" Rod, carrying a ½" Helical Gear 2 and held in place by Collars. Another Collar is added to the Rod, above the Double Angle Strip, followed by a Socket Coupling 3, in the upper end of which a Double Arm Crank is fixed. Attached by Angle Brackets to the arms of this Crank are two hinges, the upper end of each of which is secured, along with a Propeller Blade, to a Collar 4, loose on a ¾" Bolt secured to another Collar fixed on the upper end of the 6½" Rod. A Spacing Collar 5 is also carried on the 34" Bolt with another Collar 6 being fixed on the 6½" Rod to limit upward movement of the Socket Coupling.

Locating in the waist of the Socket Coupling are two 1" Rods, fixed in the end transverse bores of a

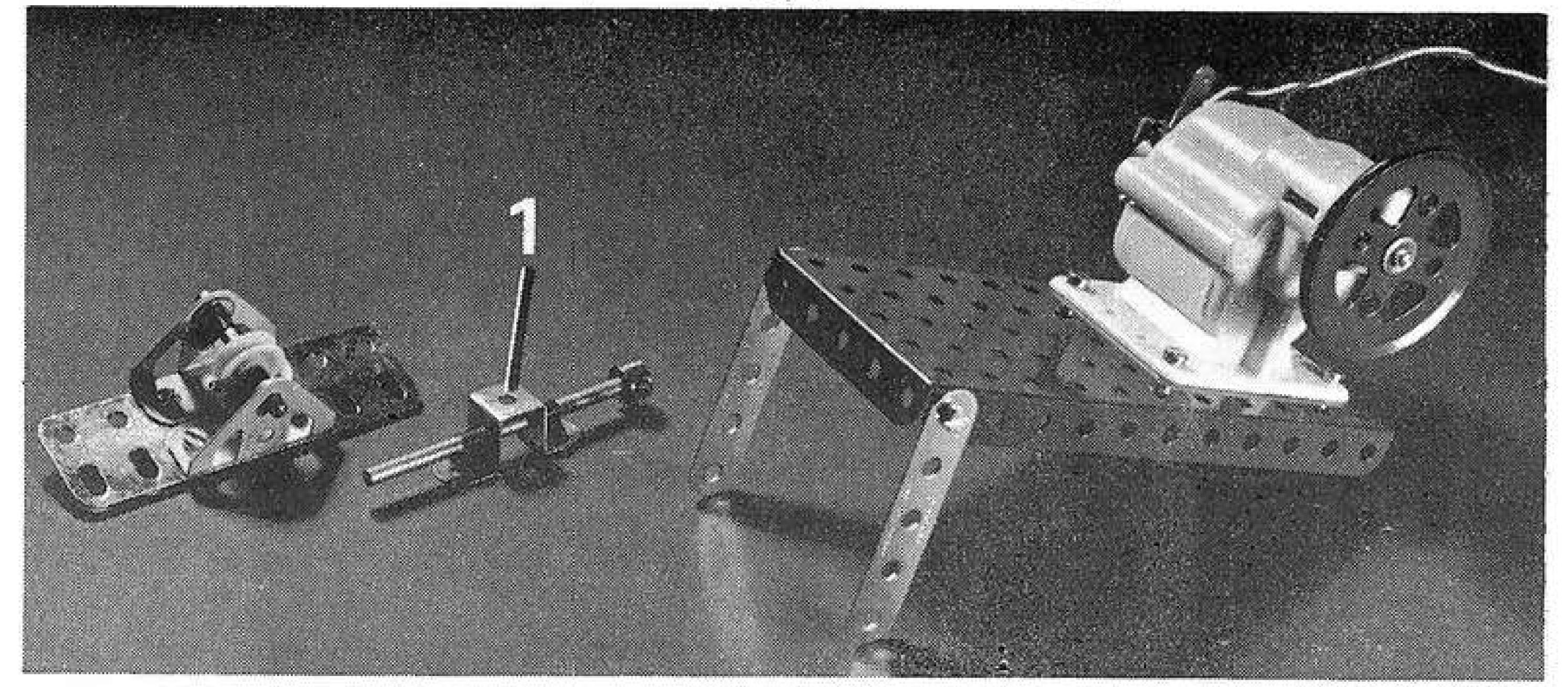
This Grand Piano, built from a Plastic Meccano 300 Set, speaks volumes for the budding design skill of 6-years old Charles Silverlock of the Bear Hotel in Maidenhead. Charles was only 5 years old when he first built the model!

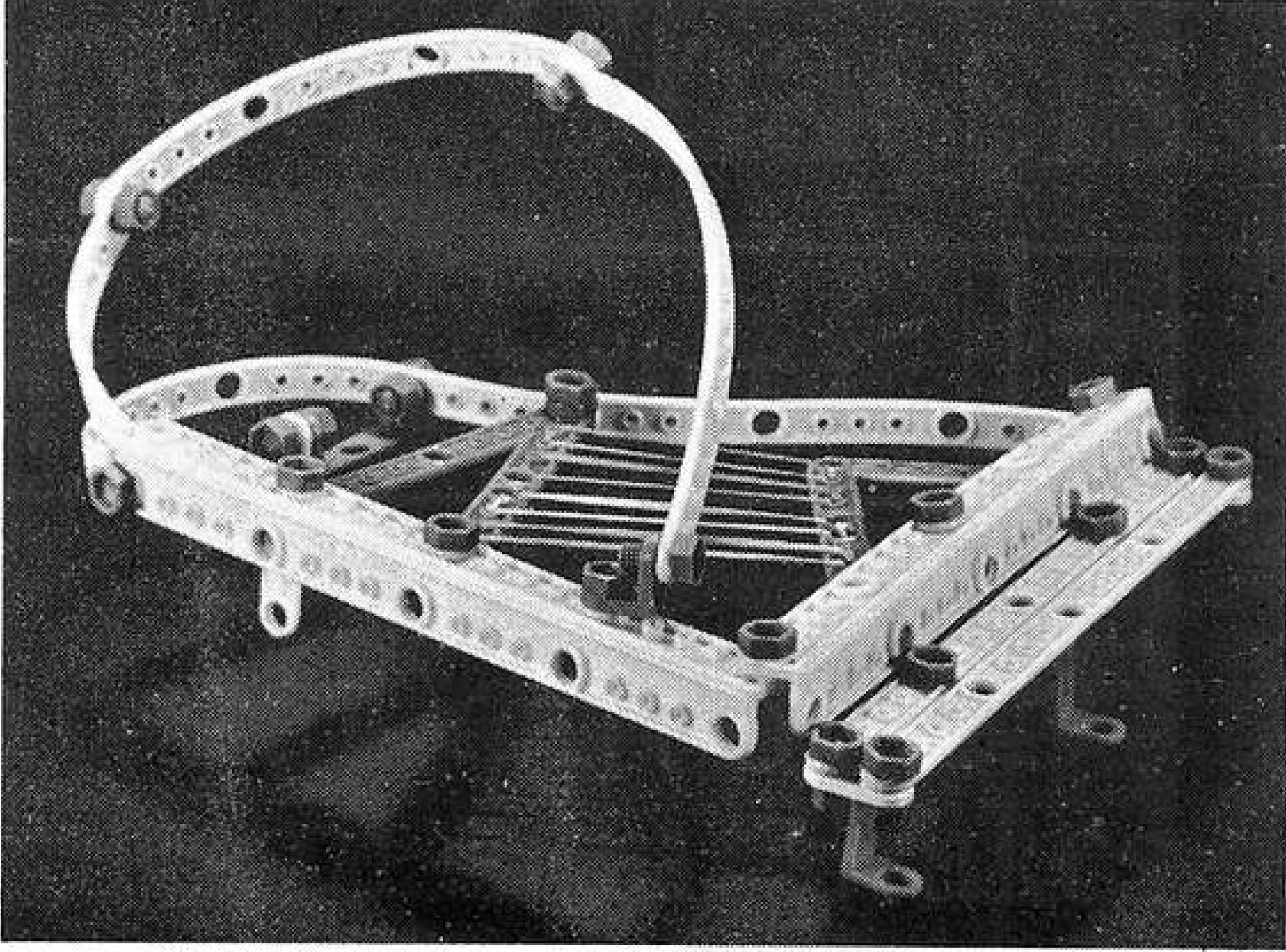


In the demonstration unit illustrated, drive to the unit comes from a 6-hole Bush Wheel, fitted with a Threaded Pin, on a 2" Rod journalled in two Flat Trunnions bolted one to each 4½" Strip. A 1½" Helical Gear on the Rod meshes with Gear 2.

	PARTS F	REQUIRE	D
2- 2a	1-24b	12- 59	1-115a
1-11	23-37b	1- 62b	2-126
3-12	25-37c	1-63	2-126a
1-14	15-38	1- 90	1-171
1-16	2-41	2-111	1-211a
1-17	1-48	2-114	1-211b
2-18b	1-52	1-115	

The component parts of 12-years-old Adrian Liggins's Moon Rocket: left, the pulley unit; centre the Rocket, itself; right, the launching platform.





#### GRAND PIANO!

By way of complete contrast, we have next a delightful little Plastic Meccano model Grand Piano designed and built from his No.300 Set by 6-year-old Charles Silverlock of the Bear Hotel in Maidenhead, Berks. A glance at the accompanying illustration will show how nicely proportioned and realistic the model is and, as Charles was only 5 at the time he built it, I think all readers will join with me in congratulating him on his amazing modelling ability.

I particularly like the "strings" fitted to the Piano. These are rubber bands of different thicknesses and they are held in place by matchsticks which can also be used to "tune" the instrument. Strictly speaking, of course, these are not true Meccano parts, but I think we can overlook the "slip" under the circumstances! Well done, Charles.

#### MOON ROCKET

Staying with the younger element, but moving on a few years, we come to 12-year-old Adrian Liggins of Narborough, Leicester. Only a few days after the last issue of the MMQ was circulated, we received a letter from Adrian in which he gave details of a simple Moon Rocket he had been inspired to build after seeing the Rocket featured in the last magazine. I was very impressed with the speed with which Adrian got off the mark, so much so that I felt his keenness warranted a mention in the magazine, although the model itself is really very simple.

The nice thing about Adrian's idea is that his Rocket flies — in a sense! Illustrated here are the Rocket, launching platform and a separate Pulley unit making up the model. The launching platform consists of nothing more than a 5½" x 2½" Flanged Plate,

# AMONG THE MODEL-BUILDERS

Continued

angled up at one end by two 2½" Strips and fitted with a 4½ volt electric motor carrying a 2" Pulley on the output shaft.

Equally simple is the Rocket, itself, this consisting of a Double Bent Strip 1 in which a 3" Rod is held by Spring Clips, a Collar being fixed on one end of the Rod. The Pulley unit is supplied by a ½" Pulley without boss on a 1½" Rod held by Spring Clips in two Trunnions which are bolted to a 3½" Flat Girder.

The idea is that the Pulley unit is attached to a suitable point above ground level - perhaps tied to a table leg, for instance - and the launching platform placed at a point beneath, and away from it, on the ground. A length of Cord is then threaded through the holes in the Double Bent Strip of the Rocket, is passed round the Pulley in the upper unit and around the motor Pulley, after which the ends of the Cord are tied together to result in a continuous loop. Thus, when the motor is operated, the Rocket "flies" either up or down depending upon the direction in which the motor drives.

As I say, it's a simple idea, but one which could provide a lot of fun for young modellers.

I	ARTSR	EQUI	RED
18000			
2- 5	1-23	2-38	1- 59
1-16b	4-35	1-40	1-103d
1-18a	10-37a	1-45	2-126
1-20a	10-37b	1-52	$1 - 4\frac{1}{2}v$
ni lestications			Motor

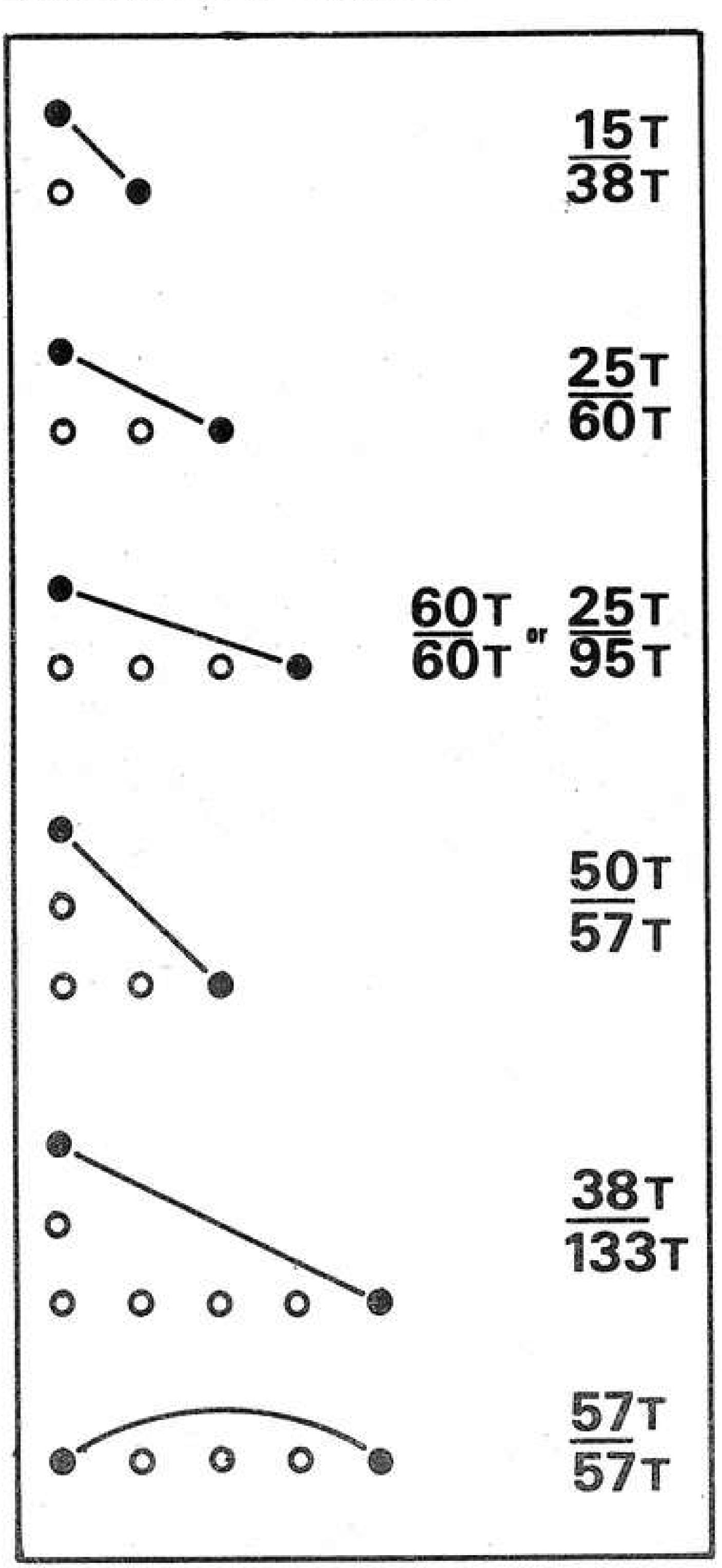
#### PARTS STORAGE

Another item in the last MMQ has also prompted Mr. R.S. Draper, of Grays, Essex, (author of "Among the Model Buildings," Oct. '75 MMQ) to send in a useful hint. "I was especially interested in Mike Nicholls' 'Stow It' item in January's Meccano Miscellany," he wrote. "I have found that the majority of Meccano Strips, Plates and Angle Girders (up to 121/2") in length) store very easily in wooden cutlery boxes purchased from Woolworth's stores. I have sub-divided some of the boxes to contain such smaller items as Collars, Couplings, 2½" Strips, etc," explained Mr. Draper. "In other cases I have taken the dividers out for open storage items such as Hub Discs; etc.," he concluded.

Sounds like a good idea, to me, although I must confess I don't know the price of the boxes!

#### NON-STANDARD SPACING

To finish on a completely different subject, advanced Modellers will know that there can be occasions where space in a model damands the use of out-of-line gearing, or where special gear ratios are required necessitating the use of Gears at non-standard-spacing. Mr. R.R. Hauton of Lincoln has looked at the problem and has kindly provided the following information as to the Gears that will mesh when mounted at the spacings indicated, the black dots representing the holes in which the supporting axles would be mounted:



In addition to the above, Mr. Hauton says that, "For some difficult ratios, the unorthodox may be permissible, e.g. linking a Gear Wheel with a Sprocket Wheel via Sprocket Chain (Sprockets provide the factors 7 or 9 in compact arrangements)." He further goes on to say that in some arrangements, "A floating Pinion

is sometimes needed to correct the direction of rotation. One example may help:

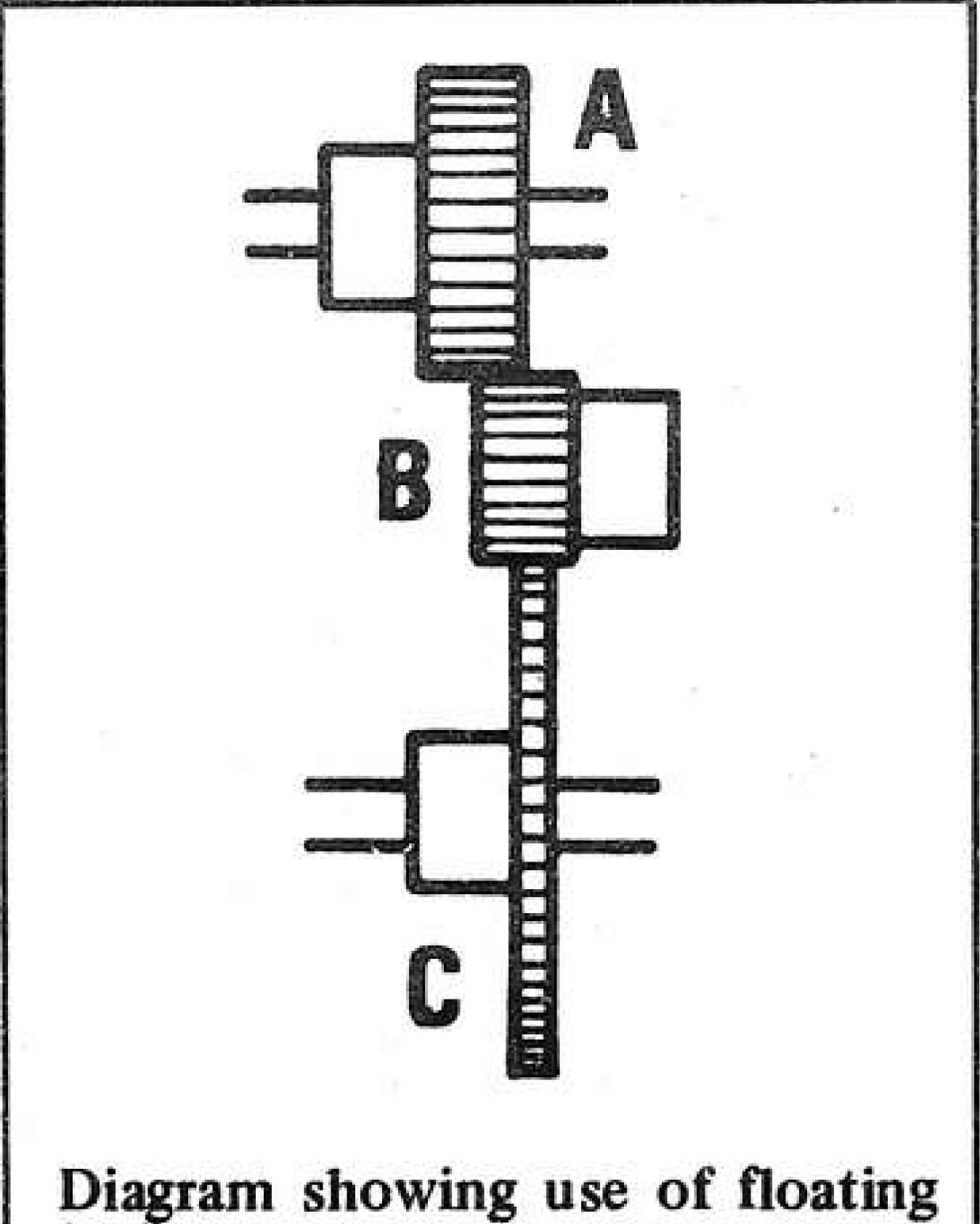
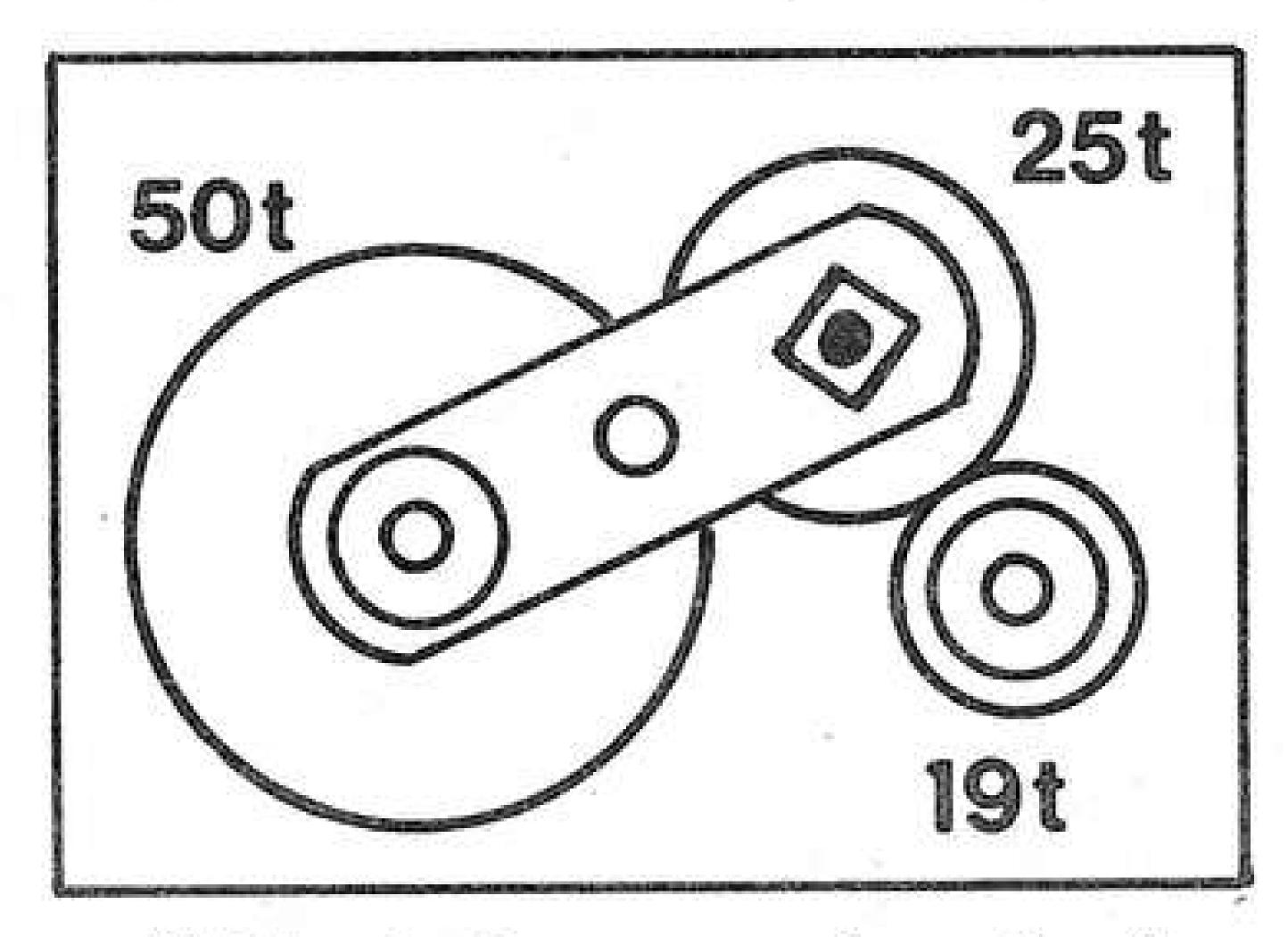


Diagram showing use of floating Pinion to reverse direction of rotation. A = 25-t Pinion, B = 15-t Pinion, c = 50-t Gear Wheel.

"The 19-teeth Pinion can be locked in the slotted hole of a Crank with a 34" Bolt and two Nuts, the boss of the Crank being bolted to the frame of the supporting structure. Occasionally, a Gear is required to rotate free in one direction, and to do this a floating Pinion is pivotted on the Crank, but the Crank boss is loosely journalled on the shaft taking one of the Gears, thus:



"This device can replace the free wheel made up of Pawls and Ratchet Wheel in some clocks, etc.," says Mr. Hauton.

And I leave the last word to Mr. Hauton, himself. "One bit of advice," he says: "Look after your Gears carefully. The teeth are easily damaged if such parts are carelessly stored. I keep my Gears with bosses bedded in polystyrene tiles and it pays off in smooth running."

# MECCANO CLUB ROUNDUP

All Meccano Clubs are invited to submit reports for these pages. Reports should be approximately 350 words long, and should reach us by the end of the second month before month of publication.

#### HENLEY SOCIETY OF MECCANO ENGINEERS

The February meeting of the H.S.M.E. turned out to have a distinctly historical flavour: the focal point was a nonstration by Ted Brooker of the Meccano Differential Analyser first described in the Meccano Magazine for June 1934. Ted has built a splended version of the machine (more correctly an Analogue Computer), and prepared informative diagrams and slides.

Vintage models on show included an Ack-Ack Gun in authentic 1939 Mechanised parts (Tony Homden); a selection of 1922 Hornby bolt-together train items (John Callow); an H.P. 42 "Hannibal" in 1930's Special Aeroplane Parts (Alf Reeve) and both a constructional and ready-built Meccano Motor Car.

Amongst new models, Ian Henwoods Mobile Tower Crane reached so high that several sections had to be omitted in order to get under the hall ceiling! Peter Simpson showed a Level-luffing Crane, and Michael Edwards's Austin Seven was joined by a K-type Bus, both models being remotely controlled. John Mildenhall showed his excellent Crawler Tractor, and Tony Homden has made what must be the only working Meccano hydraulic model—a Peristalic Water Pump. Equally compulsive viewing was Bill Roberts's Fence-making Machine.

Two Looms were shown; John Clayton's featured a gear-driven shuttle, and Tony Knowles's made such beautiful material that he was actually wearing a length as a tie!

Jack Partridge reported on his recent visit to the celebrated Meccano enthusiast, Dr. Keith Cameron, who lives in the U.S.A., This was a great moment for Jack, and, by proxy, the Henley Club. Greetings, Dr. Cameron, and congratulations on your superb new model of a Case Tractor, which we viewed on slides!

ALF REEVE.

#### NORTH EASTERN MECCANO SOCIETY

Regular meetings have been the keynote of the winter activities of the Club, all the meetings being well attended considering the distances that some members have to travel.

At the January monthly meeting, Joe Etheridge demonstrated a fine Dockside Crane based on the GMM model. Chris Barron demonstrated the bearings of his Steam Roller built from photographs supplied by Alf Reeve of Maidenhead, builder of the original supermodel.

Other models under construction were the original Motor Chassis by Bill Chalk, and a large B.R. Container Handling Crane being built by Frank Beadle. Rowland

Johnson offered some original Meccano for sale or exchange to members.

The main business of the January and February meetings has been preparation for the Society's anticipated appearance on Tyne Tees Television, which, by the time this is read, should have taken place. We expect to muster about 8 models, all of which have to be transported to the Newcastle Studios for screening.

Two more window displays were arranged at the request of shopkeepers who have shown great interest, so we have plenty to keep the members busy during the winter months. Press advertisements have been arranged with a view to seeking out more members, and the financial side of the Society is in the capable hands of Sally Etheridge, our Treasurer.

Meccanomen in the North East who would like further details of the Society should contact the N.E.M.S. Secretary, Frank Beadle, at 'Greytyles'. Yoredale Avenue, Darlington DL3 9AN. Tel: 56097.

FRANK BEADLE

#### SOUTHERN CALIFORNIA MECCANO CLUB

Since our last report, Hal Munn has had to resign as Club President for personal reasons.

Our last meeting was held at the home of Jack Taylor: Jack had quite a few models to show off and they were greatly appreciated by the members.

The Club has presented two displays of Meccano at public libraries in Garden Grove and Carson, California. The Garden Grove display was extended two weeks, by the librarian, due to public interest. The Carson Library display included a contest for boys and girls with a small Meccano Set as the prize. Over 2,000 entries were counted, with about a third being entered by girls!

The Club also had a display table at the Annual Convention of the 'International Toy Buffs Association', and received quite a number of complimentary comments from those attending. Also, a presentation was made on Meccano history, parts, sets and literature to the Pasadena International Toy Buffs Association at their December meeting.

Through the Club Report in the MMQ and our library displays, we have received enquiries not only locally, but from throughout the U.S.A. and abroad. We are also welcoming three new members, Mr. Auton Calleia of Granada Hills, Mr. John Edwards of San Gabriel and Mr. Douglas A. Lock of Manhattan Beach.

We have tentative plans for two more library displays this coming Spring.

CLYDE T. SUTTLE

(Any reader interested in joining the Southern California Club should contact the Secretary, Clyde T. Suttle, at 6062 Cerulean Avenue, Garden Grove, California 92645. Tel! 714-892-0602).

#### STEVENAGE MECCANO CLUB

There has been plenty of news recently from our country-wide membership, with Roger Le Rolland of Stoke-on-Trent displaying several of his models in local shops over the Christmas period, and Jack Farringdon showing his Fairground models at Christmas Grottoes in Newport.

In February, Michael Edwards put on a one-man Meccano Exhibition at the Spencer School, St. Albans, and, nearer to home, Peter Brown's models went on display in the Stevenage Hobby Shop.

Neil Alston organised a Hornby-Meccano Exhibition in November 1975 as part of the North Avenue Church Bazaar at Letchworth, and twelve members of the S.M.C. 'headquarters staff' attended this event. Jock Proud's Meccanograph did him proud, working unceasingly throughout the show, Also on show was a Lotus Sports Car by Keith Assender, which was based on the S.M.C. chassis, a basic design by your scribe. Multikit models were shown by Clive Alston, Paul Wallace and Mark Webb, and Peter Brown was photographed in the company of a No. 10 Set Robot, for the local newspaper. For Dennis Higginson, our Secretary, and the other keen Meccano historians present, a special feature of the show was their first glimpse of a model built from the Wartime Mechanised Army Outfit, by John Kitchen.

More press coverage was obtained in January, through the free-issue Stevenage Comet which carried a centrespread on the activities of the Club, illustrated by a picture of our photogenic Secretary.

Bookings are already coming in for S.M.C. displays at various events during 1976, and we shall, of course, be reporting on these in due course.

Recently enrolled members include two adults: Les Braithwaite of Stevenage and Freind Howard of Hitchin. New Junior signings are Mark Williams of Rainham, Essex, and Abel Reseigh (8) and Mark Warder (6) of Stevenage. Mark is the youngest-ever member of the Club but has great potential as a skilled Meccano modeller!

We wish all Meccano modellers and other Clubs throughout the world a very successful modelling year.

The S.M.C. welcomes members from anywhere on the planet, and details can be obtained from the Secretary, Dennis Higginson, at 7 Buckthorn Avenue, Stevenage, Herts.

BERNARD DUNKLEY

#### TRANSVAAL MECCANO GUILD

As the 20th, meeting of the Transvaal Meccano Guild was also the Annual General Meeting, the Chairman's yearly report was read out to member's and the complete and amended 'Guild Constitution' plus the expense sheet was distributed to them.

Frank McClement resigned from the Committee, having served the Guild very well for the past year, and Terry Egnos was duly elected as his successor.

After tea and sandwiches, talks on the members' models took place. Joe Cretaz was first to speak, and gave a very interesting talk on the 150th. Anniversary of the advent of steam, covering the early railway engines, and an explanation of his automatic reversing steam-driven Locomotive. Bill Rudings followed Joe with a detailed description of his mobile Drilling Rig: the model was built from some photographs that Bill took of the actual vehicle working on a site near his home, and it took him about a year to complete. Power was supplied by an E20R Motor, driving through a four-speed-and-reverse gearbox to double-drive back axles and spur gear differentials, using Argentine-type helical gears (with holes).

During the afternoon, the ceremony of cutting our third birthday cake and blowing out the candles was performed by our Honorary Member, Koos Pienaar.

Two new members were welcomed to the Guild, these being Rudy Gevers from Kensington, Johannesburg, and Edwin Hodson from Maidstone, Natal.

The Southern California Meccano Club's excellent display at the public library, Garden Grove, California. The display was extended two weeks, by the librarian, due to immense public interest.



IT IS always a little risky to place a date on a particular specimen of an early Meccano product, but from time to time a useful hint is included with a label or other attached printed matter found inside a carton. The outfit illustrated in Fig.1 is just such an example, for it has the unusual feature of carrying an entire list of contents on the inside of the lid. We are printing this parts list in full, early in the article, so that readers can make comparisons with the illustrations. It is this very list that gives us a strong clue in dating this particular collectors' piece.

Part of the contents of the early Meccano Inventor's Accessory Outfit is clearly shown in the illustrations in the shape of what we know as Braced Griders. However, these "new" parts were announced in the 1915 Book of Prize Models, but were there described as "Girder Strips". No mention of these is made in the 1914 Instructions Book but the 1916 book already has the name "Braced Girder" printed in its foreword. Strangely enough, at this stage none of these new parts were included in any of the standard outfits and they were confined to the Inventor's Outfit for several years.

A number of interesting points arise from the study of this parts list, the first of which is that the distribution of the part numbers is quite random in the List of Contents. In the 1914 Meccano Instruction Manual, parts in outfits reached only as far as 65, Centre Fork, and even in the 1916 Book No.1 of Instructions only one additional part

# COLLECTORS' COLLECTORS

B.N. Love discusses the Inventor's Accessory Outfit of 1915 vintage

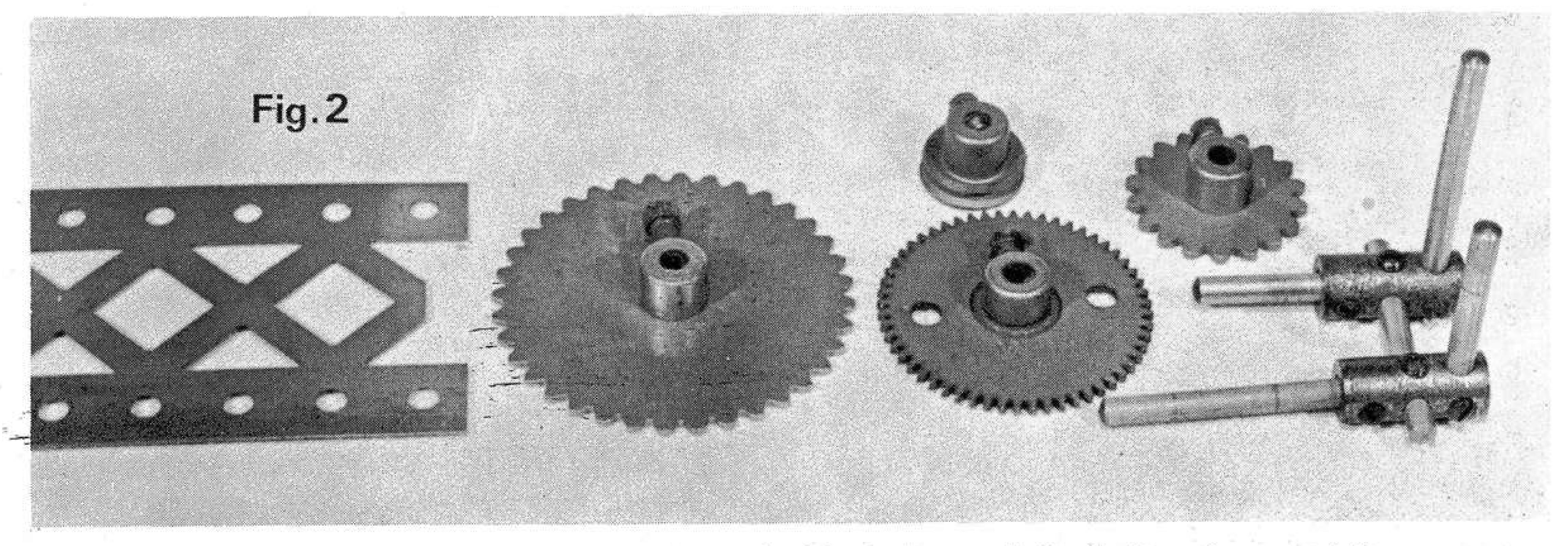
number was allocated, i.e. No.94 Sprocket Chain. However, it is quite obvious from the parts of the Inventor's Accessory Outfit that the following parts and numbers were available in 1915: 19a, 3" Wheel (this was the first 3" Wheel in the Meccano system in the form of a ten-spoked artillery wheel without boss — could this have been inspired by the war atmosphere of the period?); 23a, the ½" Pulley with boss; 20a, a rather peculiar 2" Pulley; 94, Length of Sprocket Chain; 99, the 12½" "Girder Strip" (Braced Girder); 100, the 5½" ditto; 95 and 96, the 2" and 1" Sprocket Wheels respectively and 101 the wire Healds for loom-making.

Despite the availability of the new parts, only the new Sprocket Chain was actually listed in the Contents of Meccano Outfits from No.0 to No.6 for several years after 1915. If it is assumed that the above parts were first in production in 1914 for release in 1915, then the severe shortages of war conditions may not have been foreseen. Or was it good business in selling an entirely new product with just a hint of commercial jiggerey pokery in not putting the full range of new parts in the range of standard sets? Who knows? But these are the sort of problems which vex the would-be Meccano historian.

Meccano Limited covered themselves to some extent by indicating in the Inventor's Outfit that these parts could be obtained as separate items, but they did not

A re-set list of contents of the Meccano Inventor's Accessory Outfit. The format of the original "List of Contents" can be seen in the above illustration, where it appears on the inside of the box lid.

No.			Qt	y. No.		(	Qty.	No.		(	Qty
99	Girder Strips	, 12½°°	4	101	Healds	•••	24	38	Washers		12
100	66	51/2"	8	27a	Gear Wheel, 11/2"		1	62	Crank	•••	1
95	Sprocket Wh	eel, 2"	1	26	Pinion, 1/2"		1	63	Couplings		2
96			1	18a	Rods, 1"	•••	2	59	Collars and Set-screws		2
23a	Pulley w/set-	screw ½"	1	94	Sprocket Chain	•••	. 1	19a	Wheels, 3"		2
20a	66	2"	1								



Above, a close-up view of some of the special parts contained in the Inventor's Outfit. Note the unusual sharp corners on the Braced Girder.

hesitate to claim that models could be made with the 0 to 6 Outfits which incorporated parts not actually included in the outfits! Model 229 on page 69 of the 1916 Instructions Book No.1 needs a pair of the peculiar 2" Pulleys mentioned above, but these were certainly not listed in the parts for the No.4 Outfit. Many models in this particular Instruction Manual specified chain drive, but these could not be built unless the modeller had the Inventor's Outfit, or had bought the part separately.

A further escape clause by Meccano Limited was included in the foreword to their Manuals for several years, explaining that a number of the models illustrated required the additional parts of the Inventor's Outfit, specifying the new Meccano Braced Girders, Sprocket Wheels, etc, the "etc." covering a multitude of omissions! In fact, quite a range of parts, in addition to those of the Inventor's Outfit, were shown in the illustrated parts list in Manuals of the day and were not to be found in the Contents of Outfits lists. It comes as a surprise to many that this policy is still part of the system, the No.10 Set having no samples of quite a number of standard Meccano parts!

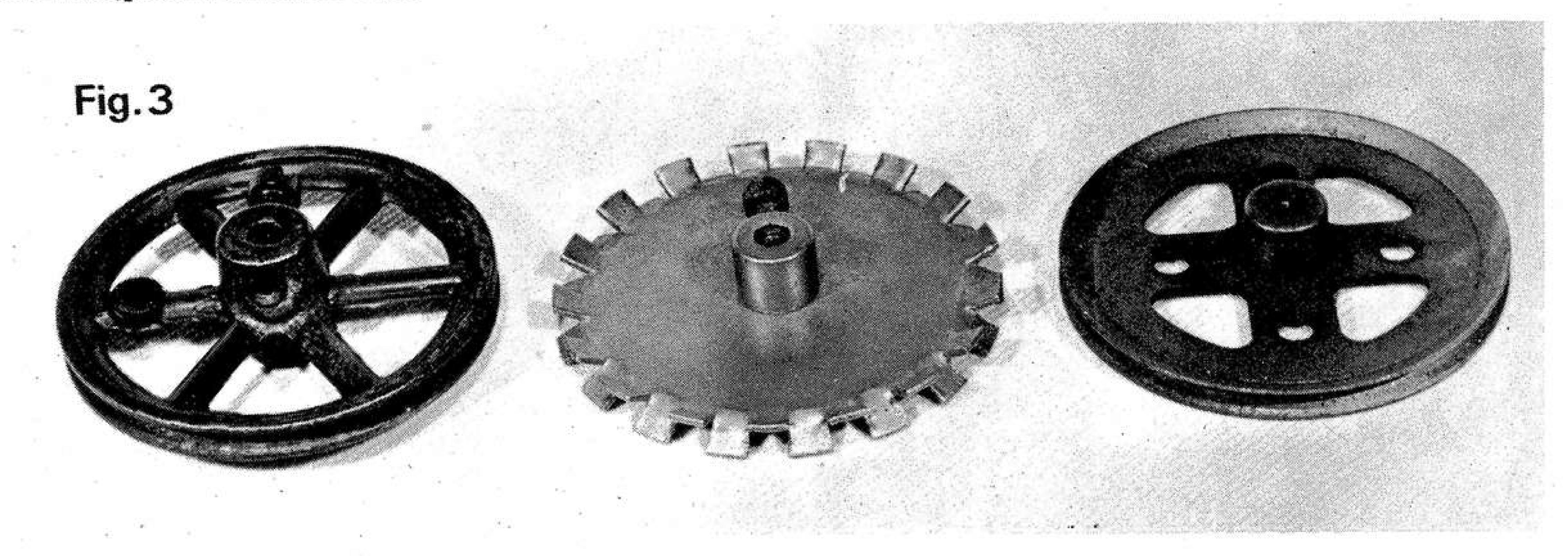
Fig. 2 shows some of the pieces from the Inventor's Outfits in close-up. Very noticeable are the sharp corners on the Braced Girders — a most surprising practice since standard Strips and Girders had been 'rounded off' some years earlier. And why was a 2" width selected for this part when 2½" (as per Flexible Plates of to-day) seems so

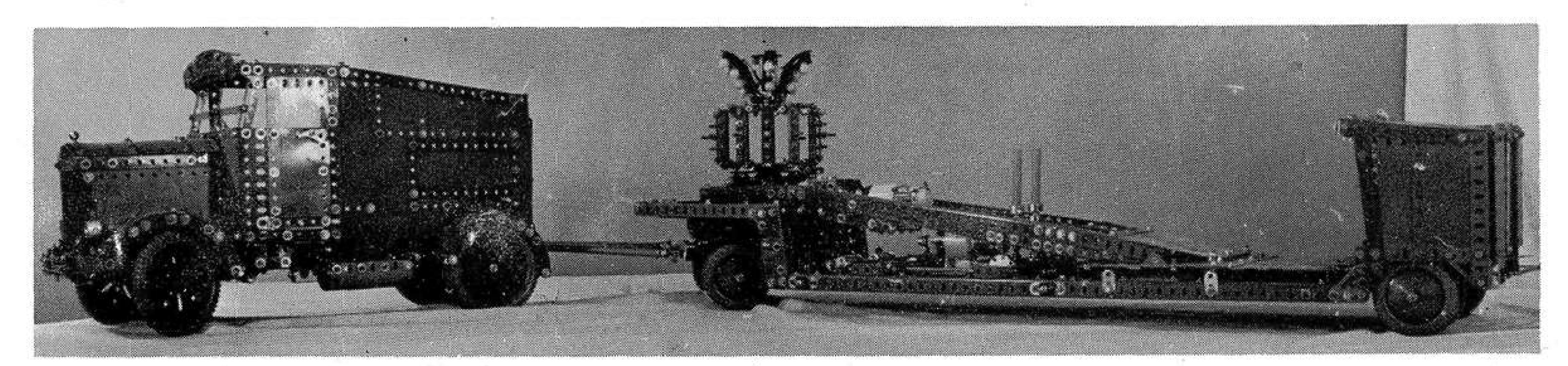
much more logical? Now look at the 2" Pulley which is of a die-cast alloy and far more like a flywheel than a pulley. It even has a small bush casting on one of the spokes — why? Or was this a case of importing a standard line from another toy manufacturer? It certainly has a 'foreign' look about it. This was short lived, however, and by 1918 it had evolved through the utility single pressing to the present-day shape as shown in Fig.3. The ½" Pulley with Set Screw is an all-nickel job made from two pressed discs peened to a pummel, very much like the form of the present day 1" fixed Pulley. Nothing seems very unusual about the two Sprockets, but the larger Sprocket has no radial holes and the smaller has arched-shaped, rather than pointed, teeth.

Cranks and Couplings had been heralded and illustrated in the 1914 Instructions book so they were a 'must' for the Inventor's Outfit. However, only two transverse bores were drilled through the Couplings as indicated by the set-up of Axle Rods in them, as illustrated in Fig.3. Sprocket Chain of the period had a number of variations in manufacture, brass, bronze and steel wire being used both in light and medium wire gauge, some runs of which were quite heavily nickel plated.

There is no doubt that this early Inventor's Outfit was another milestone in the development of the Meccano system and many a genuine inventor was weaned on such durable products of Binns Road!

Below, evolution of the 2" Pulley, 1915-1918. Left to right, first pattern die-cast Pulley, "economy" single disc Pulley, and final pattern current to date.

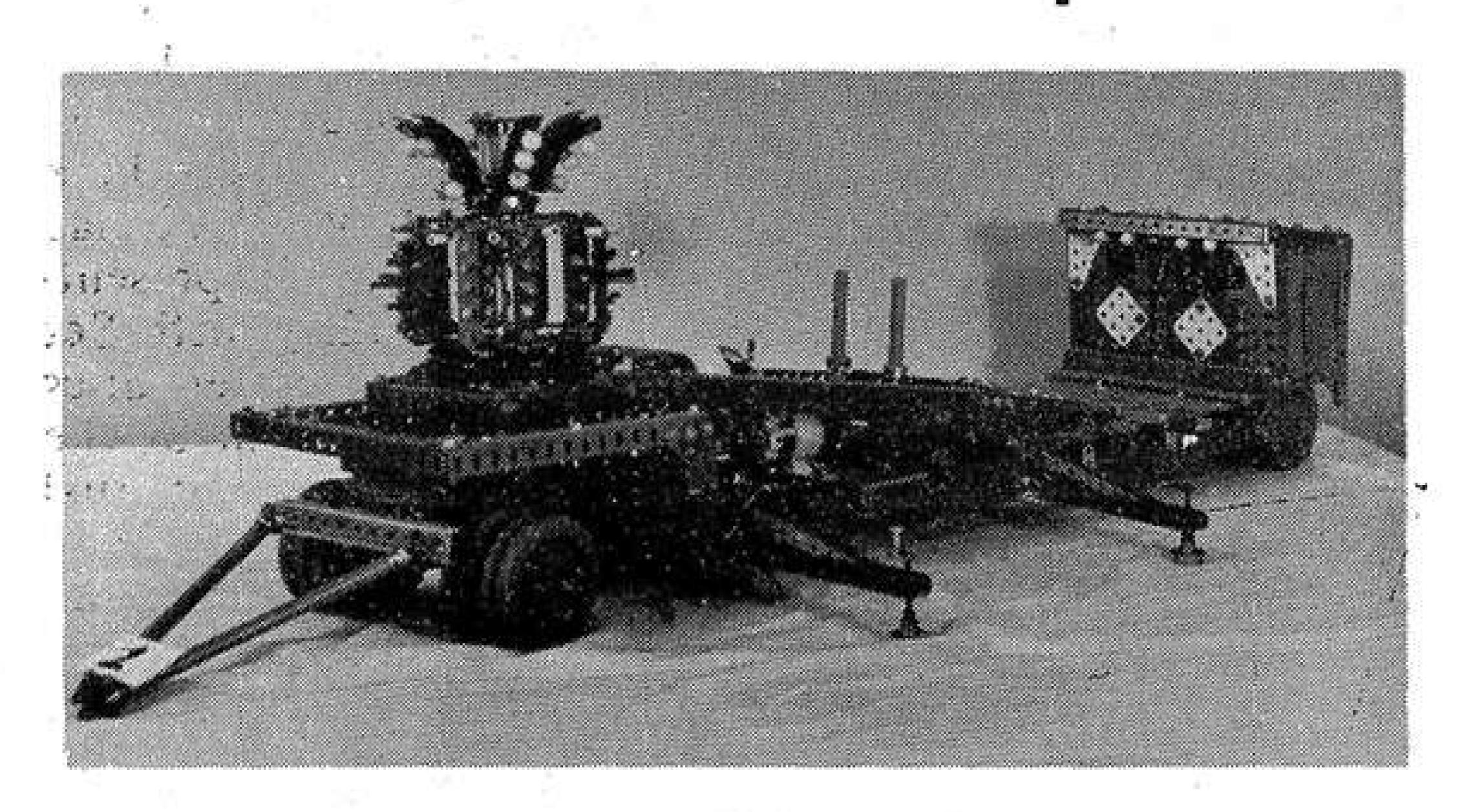




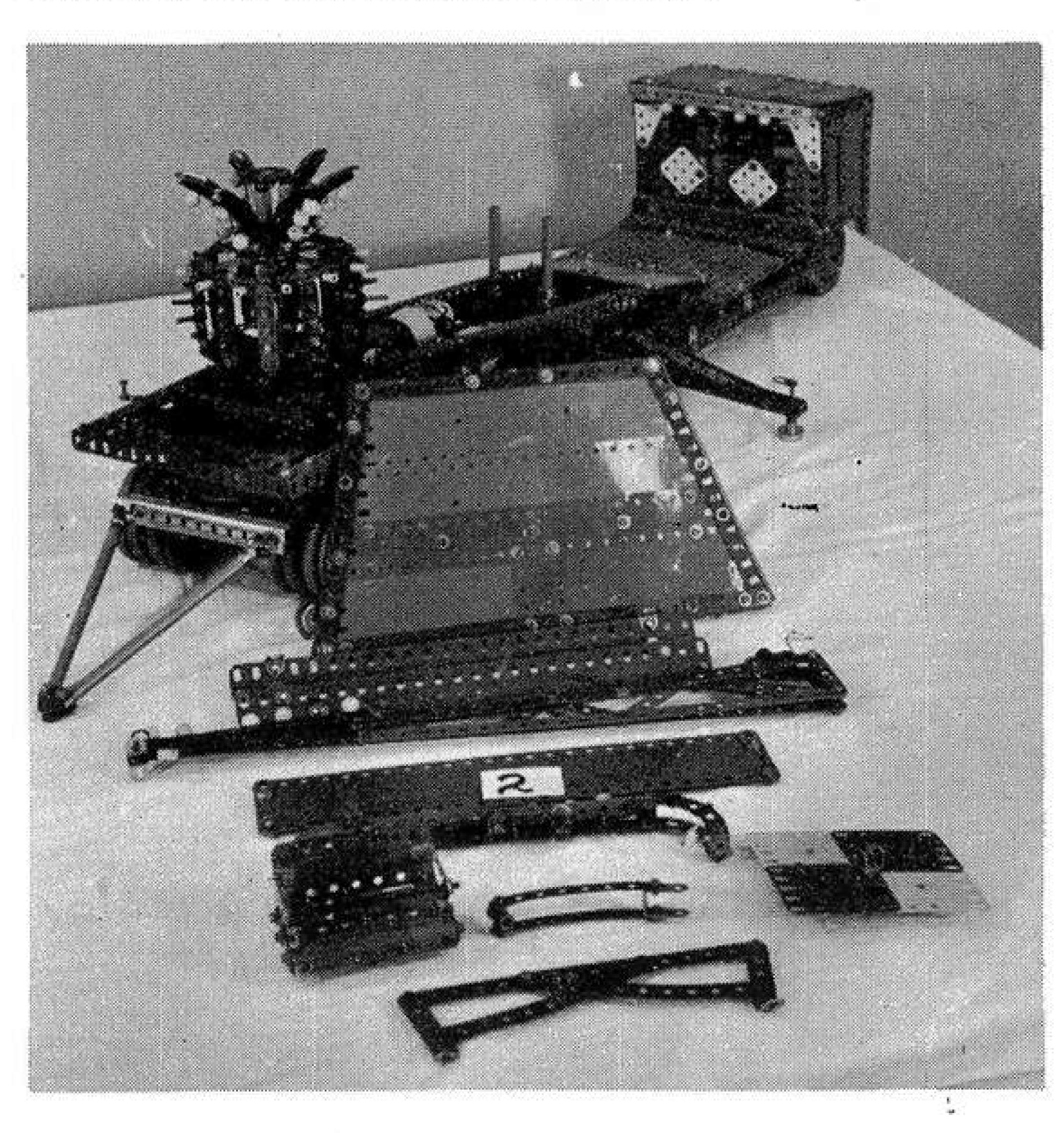
The heavy-duty tractor draws the long wheelbase trailer onto site.

# TAKE IT IN SECUENCE

## One Example of the Exhibitor's Art



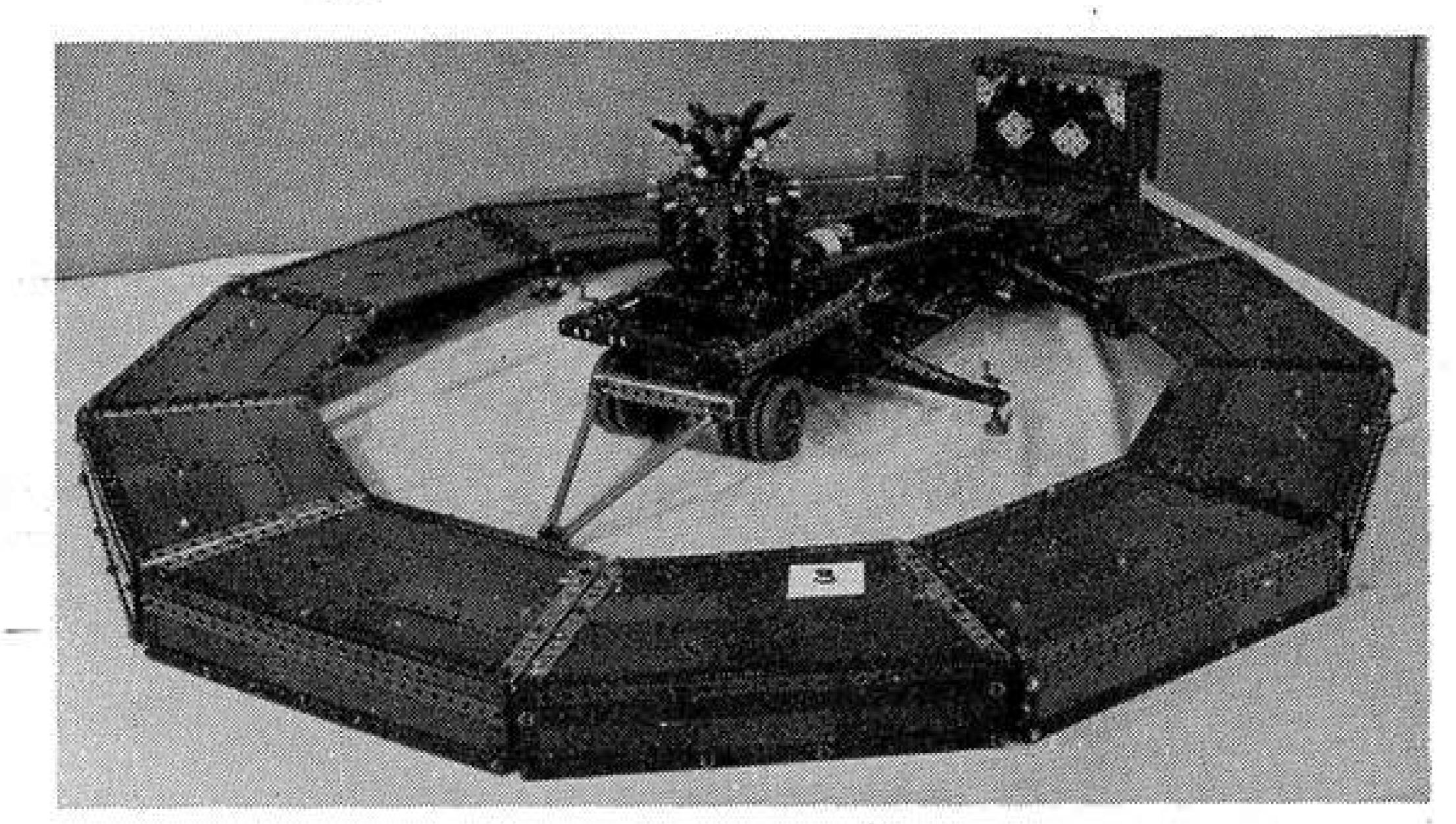
Above, the trailer is positioned, with the stabilisers locked into place to provide firm support. Below, the trailer with one example of each of the sub-assembly units. In all, there are 11 platform sections, 11 sets of steps, 11 guard rails, 12 curved connecting pieces, 12 radial arms, 12 square covers, 12 supension arms and 12 seats.



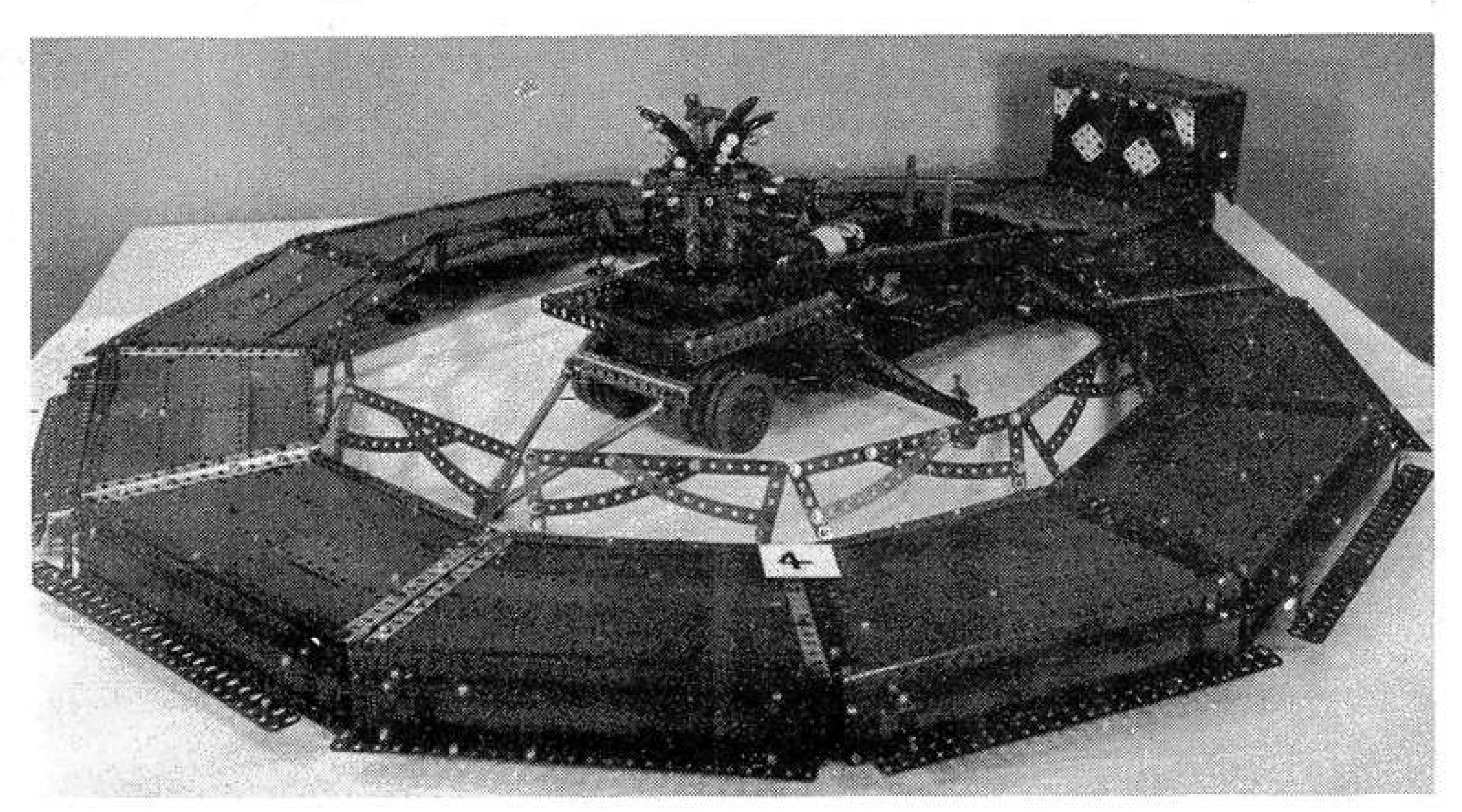
A REGULAR crowd-puller at Meccano Exhibitions and displays in recent times has been a giant 5ft. diameter Sky Diver fairground ride built by Clive Hine of Ilmington, Shipston-on-Stour, Warwickshire. Clive based his model on a real-life machine he originally saw at Stratford-on-Avon Annual Fair a few years ago and, with its fully-sequenced automatic operation, flashing lights and even taped fairground music, it makes a very realistic reproduction — as well as a very impressive display piece.

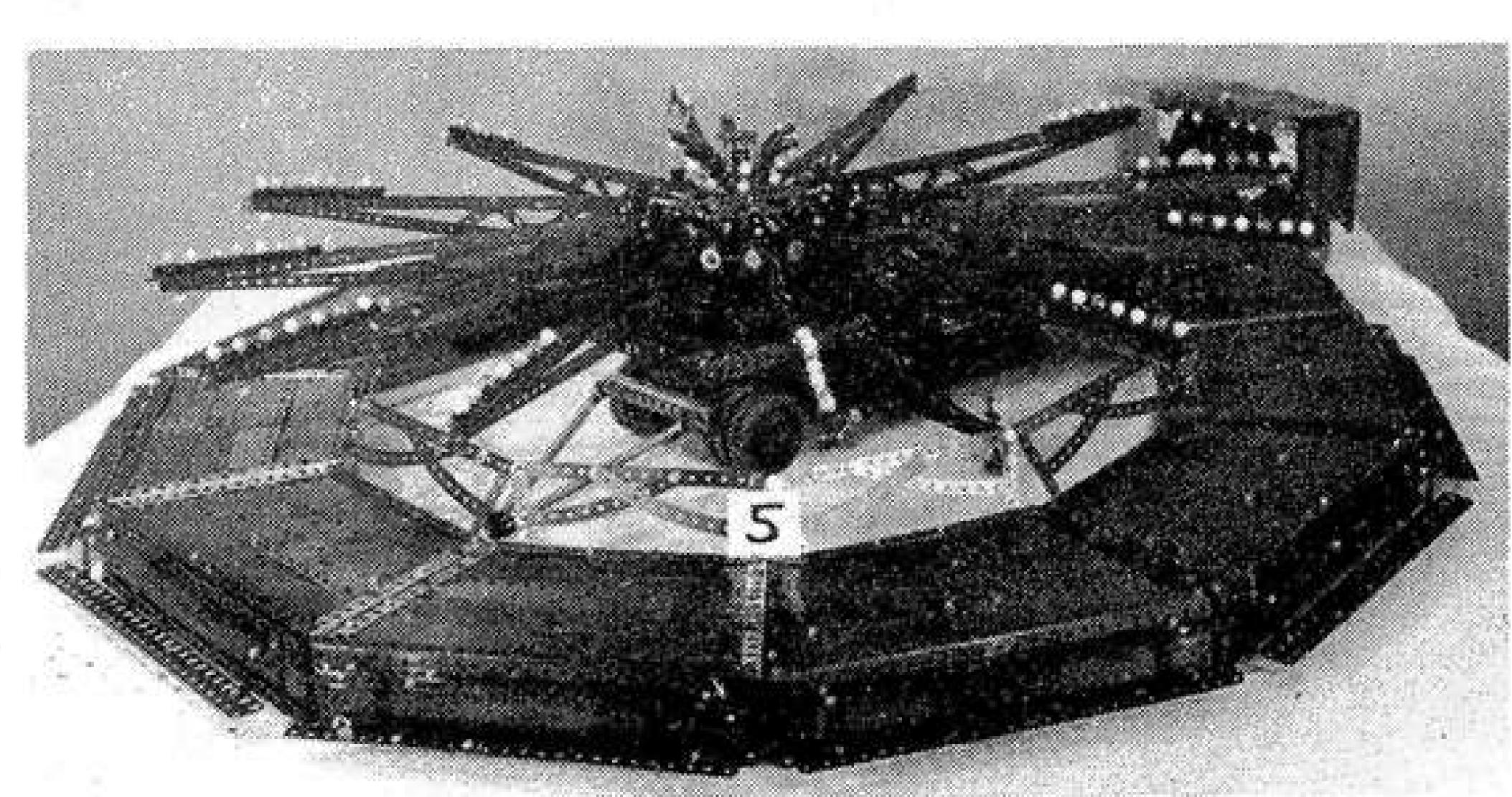
What the average viewer does not realise, however, as he watches it whirl its way through its operational sequence, is that the realism stretches much further than he thinks. Just as the real machine must obviously be broken down into sections for travelling from fairground to fairground, so also must Clive's model be sectionalised for travelling from Show to Show. (Clive runs a saloon car which cannot accommodate the model when assembled.) Thus, every time he exhibits the model, Clive must re-assemble the sections – and, as you might imagine, he now has the job down to a fine art! In fact, watching assembly is a display in itself, so we thought you'd like to see just how it's done with this sequence of photographs, taken by N.J. Chandler. The caption information is supplied by Mr. E.H. Chandler of the Midlands Meccano Guild.

Below, first major job completed; the 11 platform sections have been slotted into place, with each platform supported by short Rods on 1" Pulleys, and Rod Connectors pushed into Rod supports.

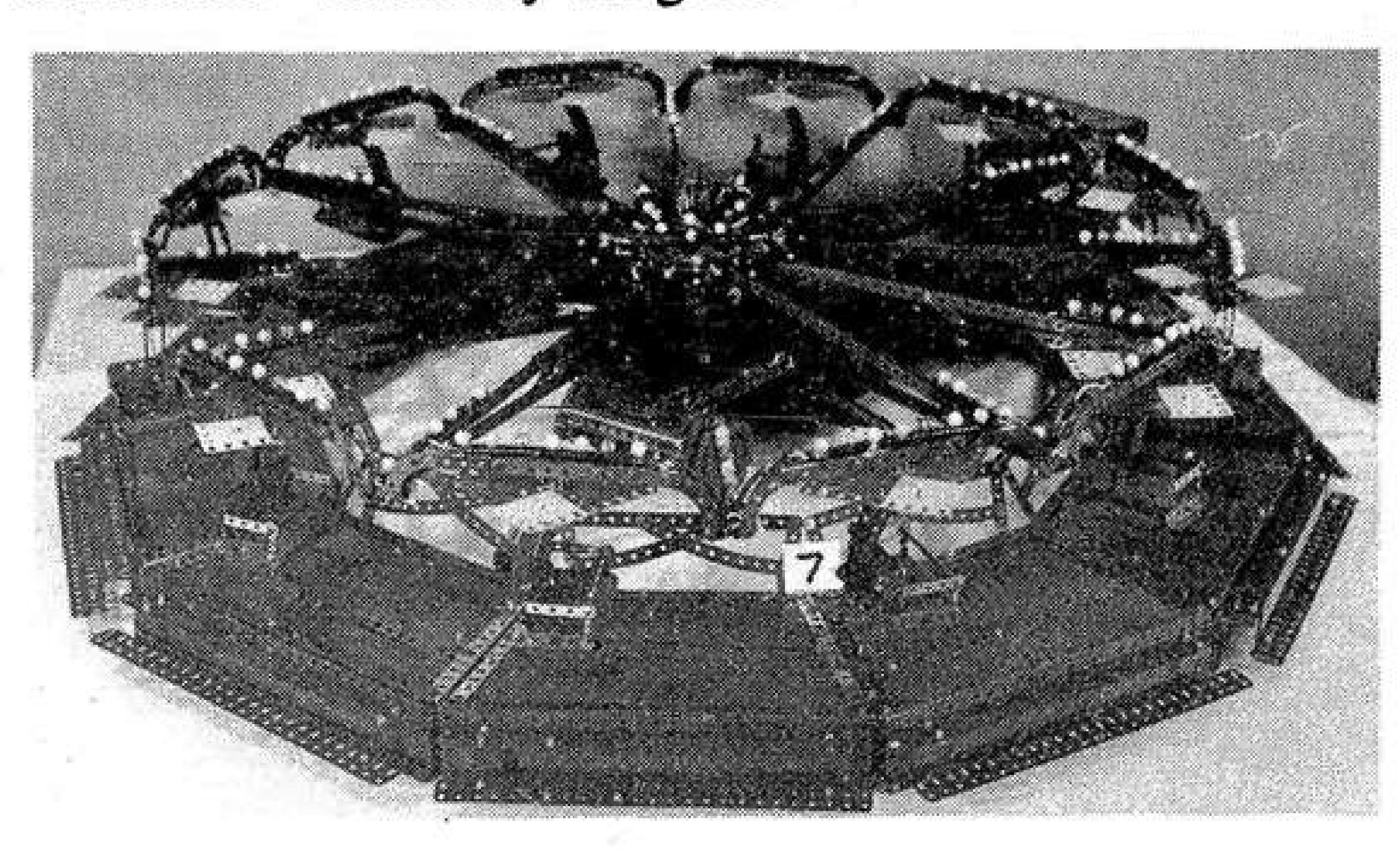


Right, with the platform completed, the steps are slotted onto the front supports and the guard rails are also slotted into position. Then, below, the 12 radial arms are added. These arms are attached to the centre post by one nut, and are also supported by Collars, above and below the centre nut, located onto bolts. This method of fixing is quick and firm. The lights shown are taped onto each arm. Below right, the connecting arches are added, these bolting onto Angle Brackets each side of the radial arms.

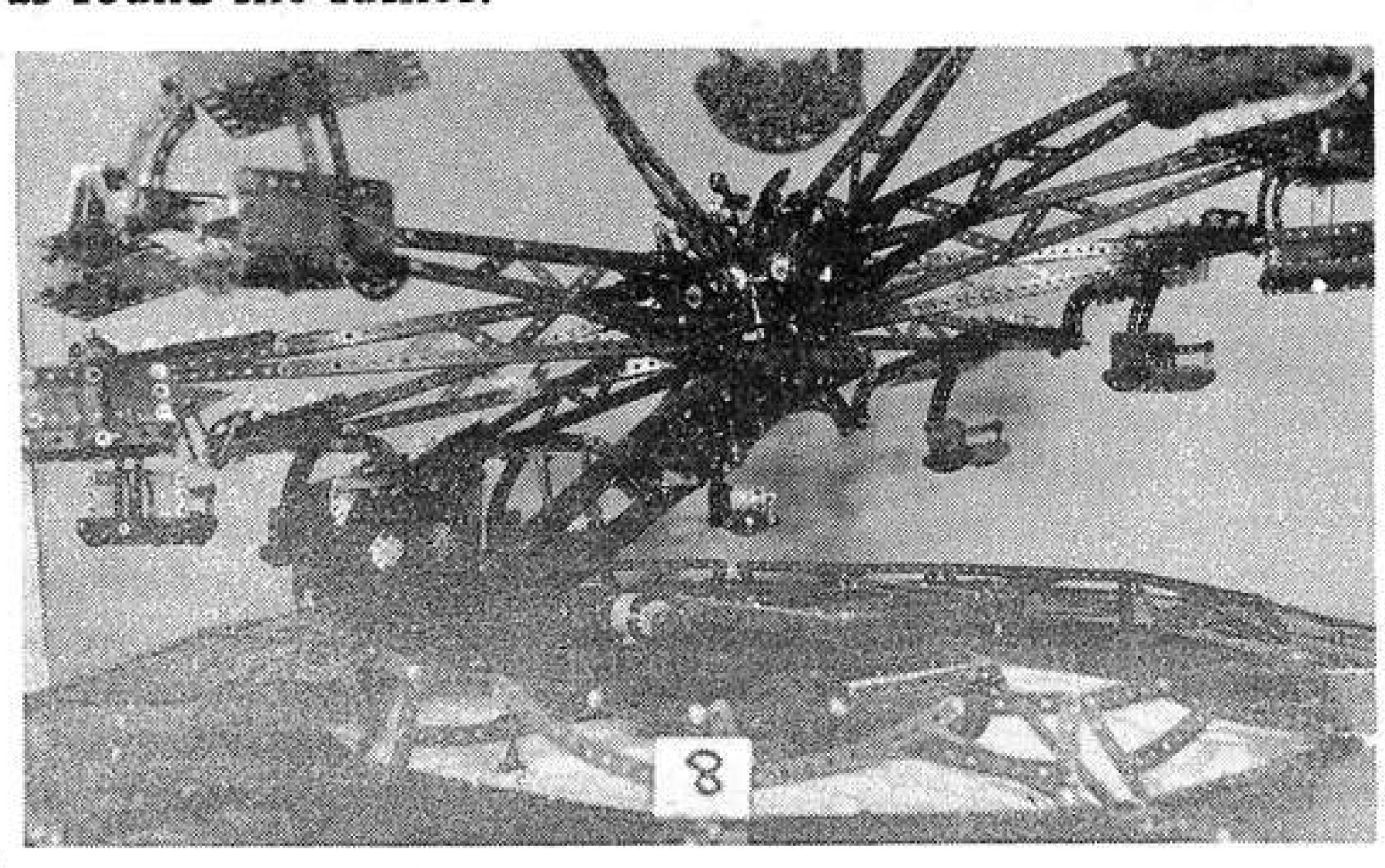


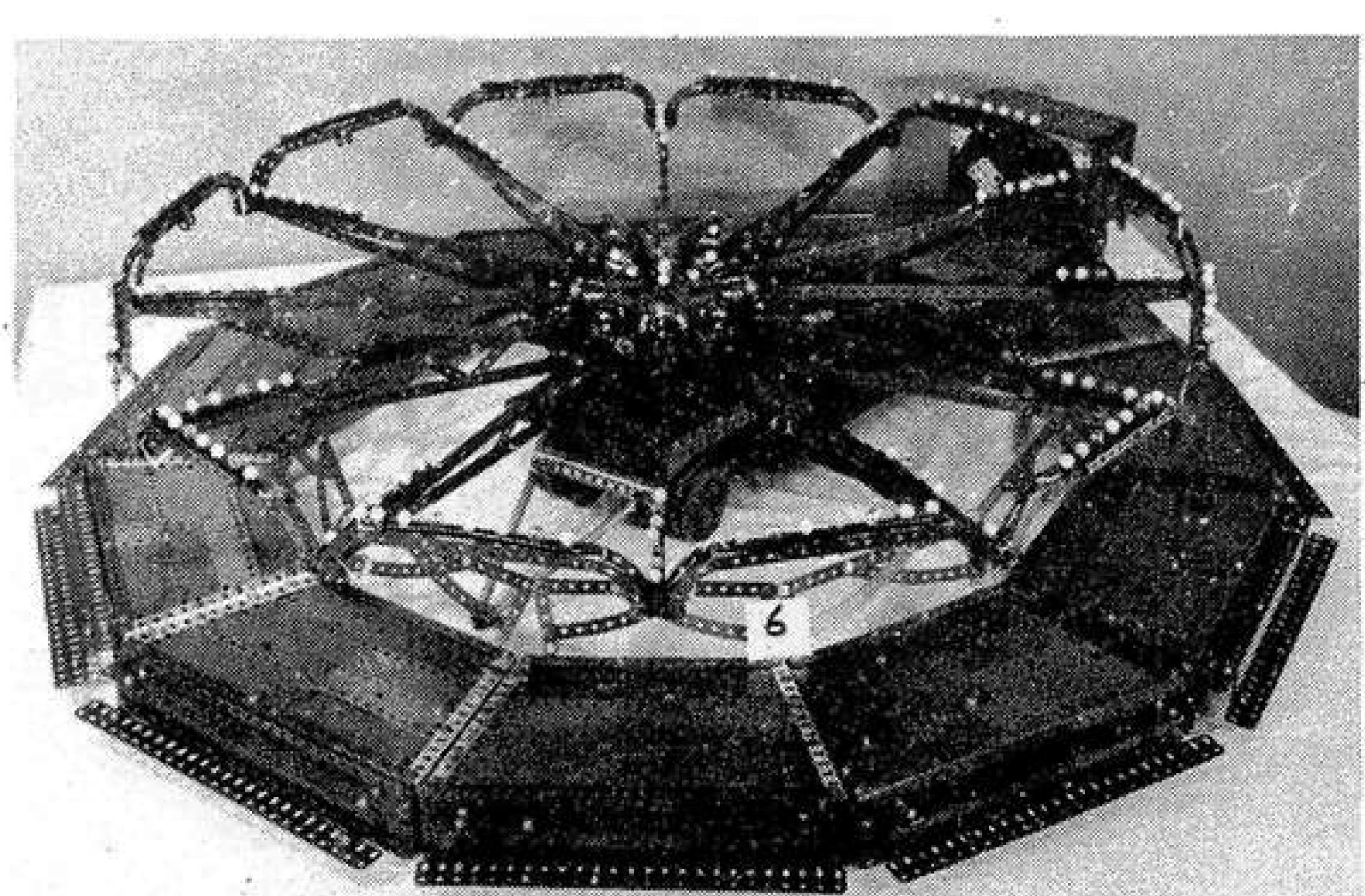


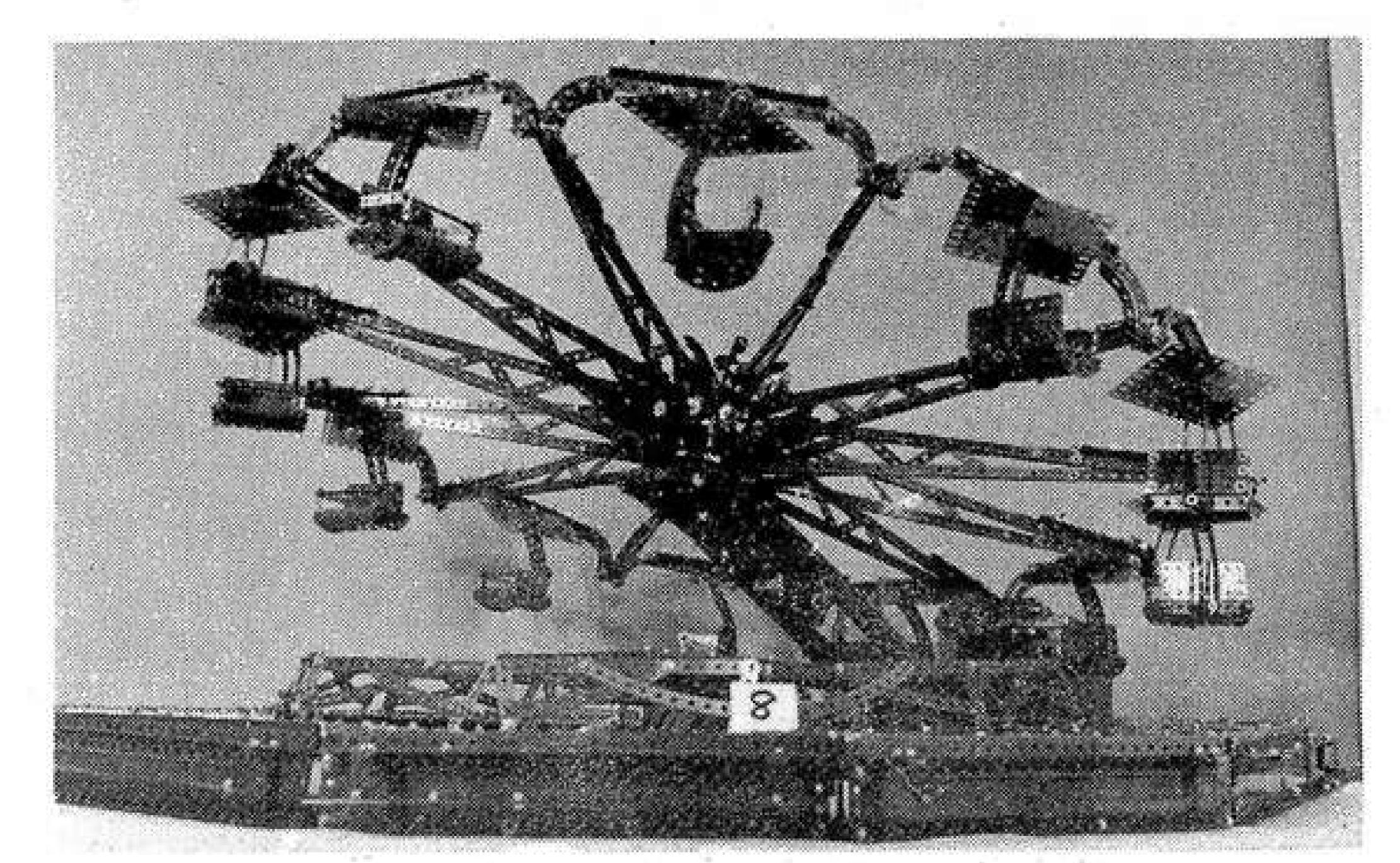
Below, left and right, final assembly is completed by adding the chairs with their covers, then the electrics are connected – and away she goes!

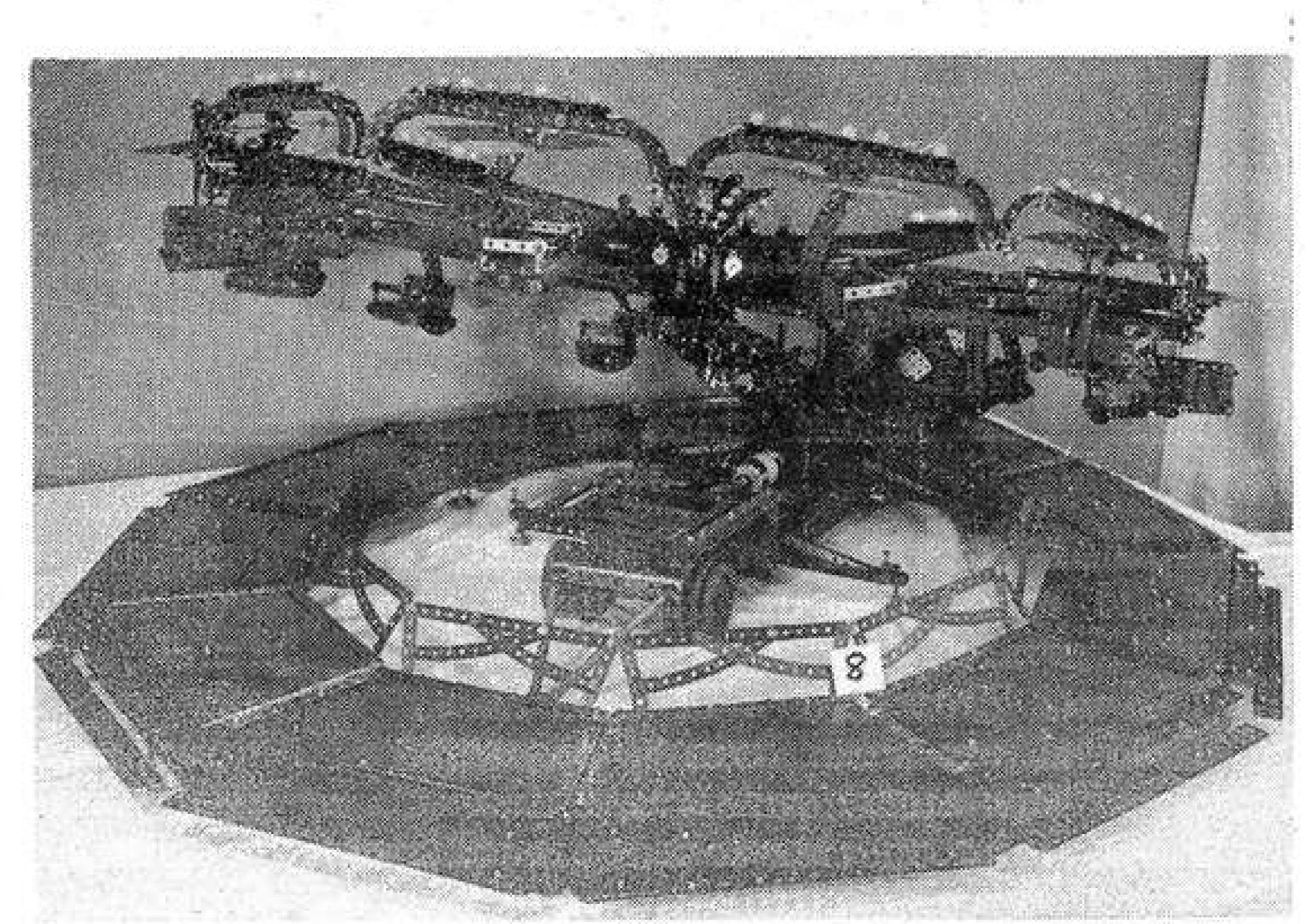


Below left, as up she swings we have a chance to look into the lifting arm and centre hub then, below right, we pull away to look down on the complete Sky Diver as round she rushes!









# The Meccano Motor Chassis

PART 1 of this fully constructional feature, describing the famous Meccano Motor Chassis of the 'twenties, was published in the January 1976 edition of the MMQ. In Part 2, here, we complete instructions for installing the mechanics of the Chassis, although in some cases it will be necessary to refer to pages 20-22 of the January magazine, where Fig. Nos. 1—7 appear. All the illustrations in both Parts of this feature are copied from the original No. 1 Special Instructions Leaflet of 1928. A list of the parts required to build the model also appears in the January magazine.

# Past Masters"

## Part 2: Gearbox, Transmission, Brakes and Differential.

#### BRAKE MECHANISM

One of the rear wheel brakes is shown in detail in Fig. 8, and it will be seen that it is of the internal expanding type. Two ½" Bolts are passed through opposite slots in Face Plate 30 and their ends, after passing through 1½" Strips 36, are secured in Collars 37 which form the brake shoes. Each 1/2" Bolt carries a Washer under its head and two on its shank between the Face Plate and Strips 36. The latter are pivotted by means of Bolts and lock-nuts to a 2½" Strip 38, free to turn about Axle Rod 27. When the 2½" Strip is moved, the Collars are thrust outward along the slots by means of Strips 36 and are pressed against the inside periphery of a Wheel Flange 39 bolted to the inside of the road wheel. Three Washers should be placed on Axle 27 between Strip 38 and the Face Plate. Care should be taken to see that the 1/2" Bolts are able to move quite freely to and fro in the slots of the Face Plate.

The Grub Screws in Collars 37 are replaced by standard Meccano Bolts, and these are used to secure a short length of Spring Cord. This serves to

withdraw the brake shoes 37 and return the brake to the "off" position when Strip 38 is released. The Road Wheel should be placed on Axle 27 with Wheel Flange 39 towards Collars 37, care being taken to see that the latter have plenty of room to move before the Road Wheel is secured rigidly to the Axle.

In the original Super Model, each Brake Rod 40 consisted of two Meccano Loom Healds bolted together (as shown in the illustrations), but a length of Cord will serve almost as well in their place. Following the illustrations, however, the Healds are connected pivotally at one end to Strip 38 by means of a Bolt and two Nuts and, at the other end, by a similar method to a Crank 41 secured to a 6½" Rod 42. This Rod carries a hand lever 43 (a 2½" Rod) by means of which the brakes are operated.

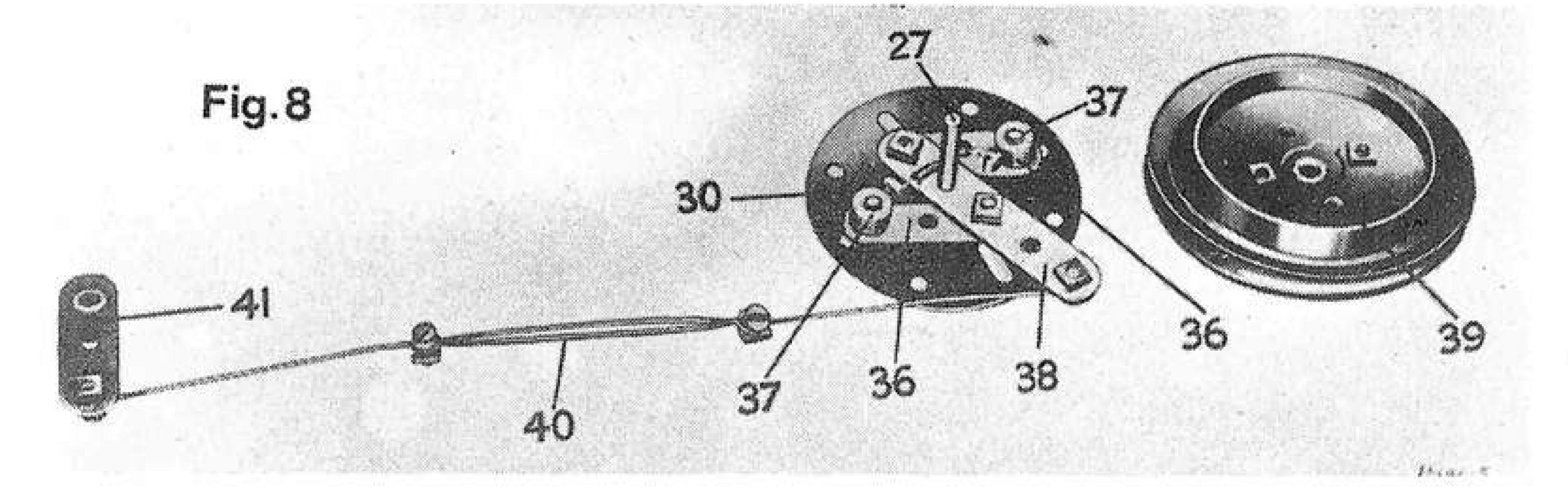
A second brake is fitted to the chassis and is operated by the foot pedal 44, the mounting of which is clearly shown in the general view of the power unit. The lever consists of a 2½" Curved Strip pivotted by its centre hole to a 3½" Rod 45 journalled in Trunnions. A length of Cord 46 is

tied to the second hole of the lever and is led under the ½" loose Pulley 47, round a second ½" Pulley 48 (mounted on a Pivot Bolt secured in the end of a Single Bent Strip bolted to cross member 2) and thence round the groove of a 1" Pulley 49 secured to the cardan shaft. The Cord is finally brought back and tied under the head of the Pivot Bolt carrying Pulley 48. A slight pressure on pedal 44 tightens the Cord round Pulley 49 and thereby retards the motion of the cardan shaft. When the brake is off, the lower portion of the pedal rests against a 34" Bolt 50 secured in one of the Trunnions, and the pedal is held thereby in a convenient upright position.

#### POWER UNIT

In the original model, a 6 volt long-sideplate electric motor was employed (in some cases a 4 volt unit), but the modern E15R motor may be substituted. In either case, the motor is mounted lying on its side and those constructors who have the older motor will be able to follow the original instructions reproduced here. As the E15R motor has shorter sideplates, however, this will need an extra 2½" Strip bolted across the main frame of the engine unit just in front of the one shown in Fig.10 and numbered 54. The motor represents the car engine, of course, and it is bolted as a rigid unit to the engine frame which in turn holds the clutch and gearbox in a similar rigid fashion. This complete unit forms the compact sub-assembly which can be easily aligned from the motor to the first universal joint and it may be removed from the main chassis of the motor car simply and quickly. This method

Fig. 8, the internal expanding rear wheel brake, ready for assembly. The obsolete Healds (40) can be replaced with cord or wire.



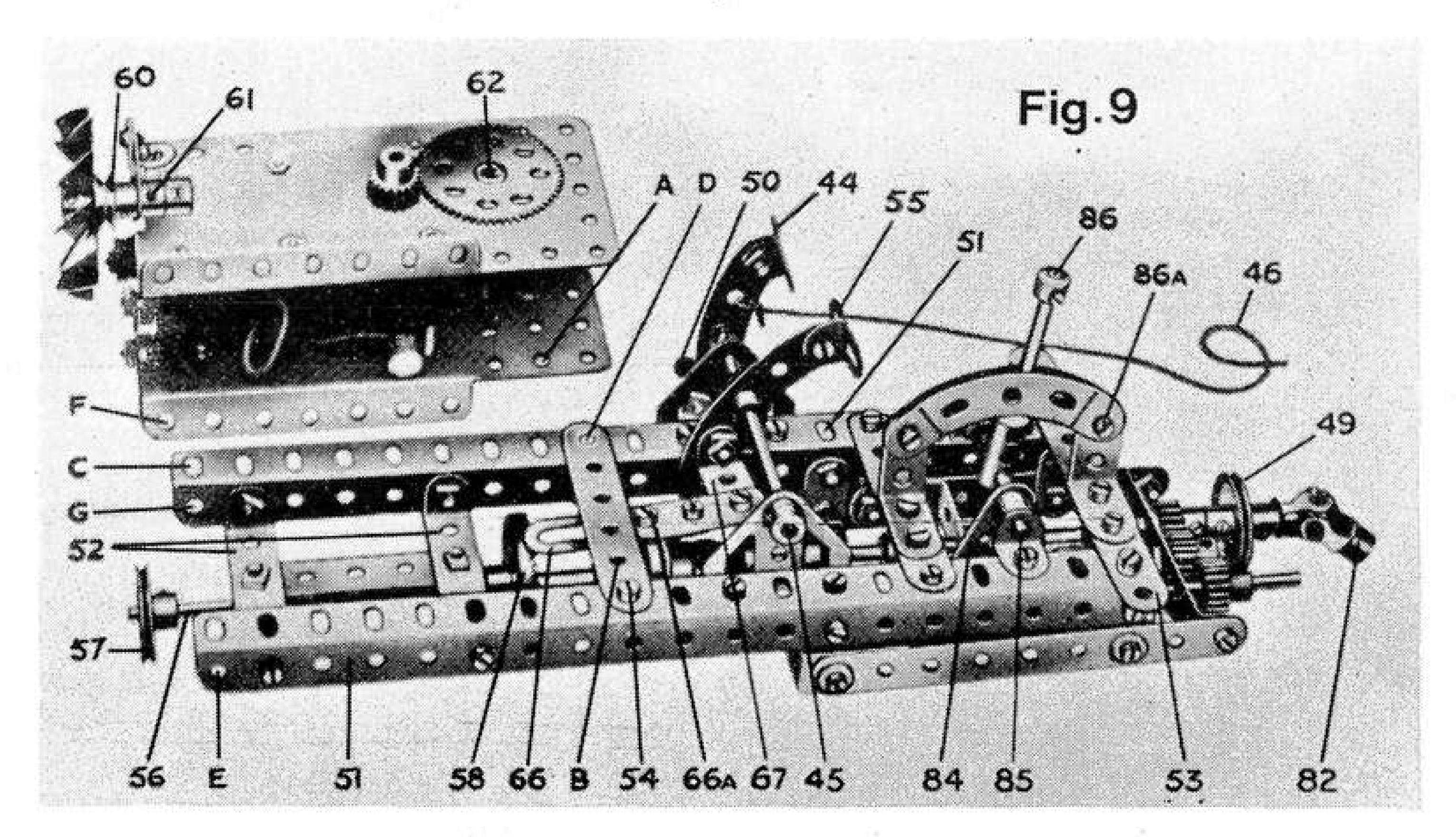


Fig. 9, a general view of the power unit, with the motor detached. An E15R Motor can be used in place of the obsolete motor illustrated.

of construction ensures that the Gear Wheels and other working parts will always be in proper alignment with each other, and that their functions will not be affected in any way by Wheel 63, with Set Screw removed, stresses and strains set up in the chassis frame.

The main frame of the unit consists of two 9½" Angle Girders 51 connected together by two 2½" x ½" Double Angle Strips 52 and 4½" Strip 53. The motor is secured to the frame by a Bolt passing through hole A in its side and hole B in a 3" Strip 54, and by two other Bolts engaging holes C and D of one of the 9½" Girders. Three Washers are placed on each of these Bolts between the motor and the frame. The motor rests on the far side 9½" Angle Girder (Fig. 9) only, to which it is bolted. The near 9½" Angle Girder is not attached to the motor except by Strip 54.

A 2½" x ½" Double Angle Strip bolted across Double Angle Strips 52 forms a bearing for a 5" Rod 56, which corresponds to the crankshaft of an actual car. This Rod carries a 1" fixed Pulley 57, a 1½" Contrate Wheel 58 and a 1" fixed Pulley 59. A length of Cord connects Pulley 57 with 1/2" fixed Pulley 60 secured to the shaft of the radiator cooling fan, which is free to rotate in the boss of a Crank 61. The latter is bolted by its end hole to an Angle Bracket secured to the top of the motor.

#### TRANSMISSION - THE CLUTCH

Drive from the motor armature is first led to a secondary shaft 62, on the lower end of which is secured a ½" Pinion, boss downwards, engaging with Contrate Wheel 58. Pulley 59 on Rod 56 forms the male portion of the clutch and is fitted with a Meccano

Rubber Ring which provides the resilient surface required in a frictional contact clutch of this type. The female clutch member consists of a Flanged placed on the end of a 3½" Rod 64.

The Flanged Wheel must slide on Rod 64 and yet be mounted in such a way that, when it is engaged by the clutch member 59, it transmits power to Rod 64. This is accomplished by two Angle Brackets bolted to the Flanged Wheel by 3/8" Bolts, from which they are spaced by Collars. Passed through the elongated holes of the Angle Brackets are two Set Screws inserted into the "spider" of a Swivel Bearing, secured to Rod 64 and separated from Flanged Wheel 63 by a portion – approximately half – of a Compression Spring 65a. The Spring normally holds the Flange Wheel in contact with the Rubber Ring on Pulley 59, but the Flanged Wheel can be forced back on Rod 64 to an extent just sufficient to throw it out of contact with the clutch member

The clutch withdrawal mechanism consists of a 2" Slotted Strip 66 bolted to a 1½" Strip, the latter in turn being bolted to a 1" x ½" Angle

Bracket 67 that is connected by a Bolt and Lock-nuts to the second hole of pedal 55. The slot of Strip 66 engages Rod 62 immediately behind the Pinion driving Contrate Wheel 58, Rod 62 thus forms a guide for Strip 66, which moves in a direction parallel to Rod 56. It will be found that when pedal 55 is depressed, the shank of Bolt 66a engages with the rim of Flanged Wheel 63, and the latter is thereby withdrawn from contact with clutch member 59.

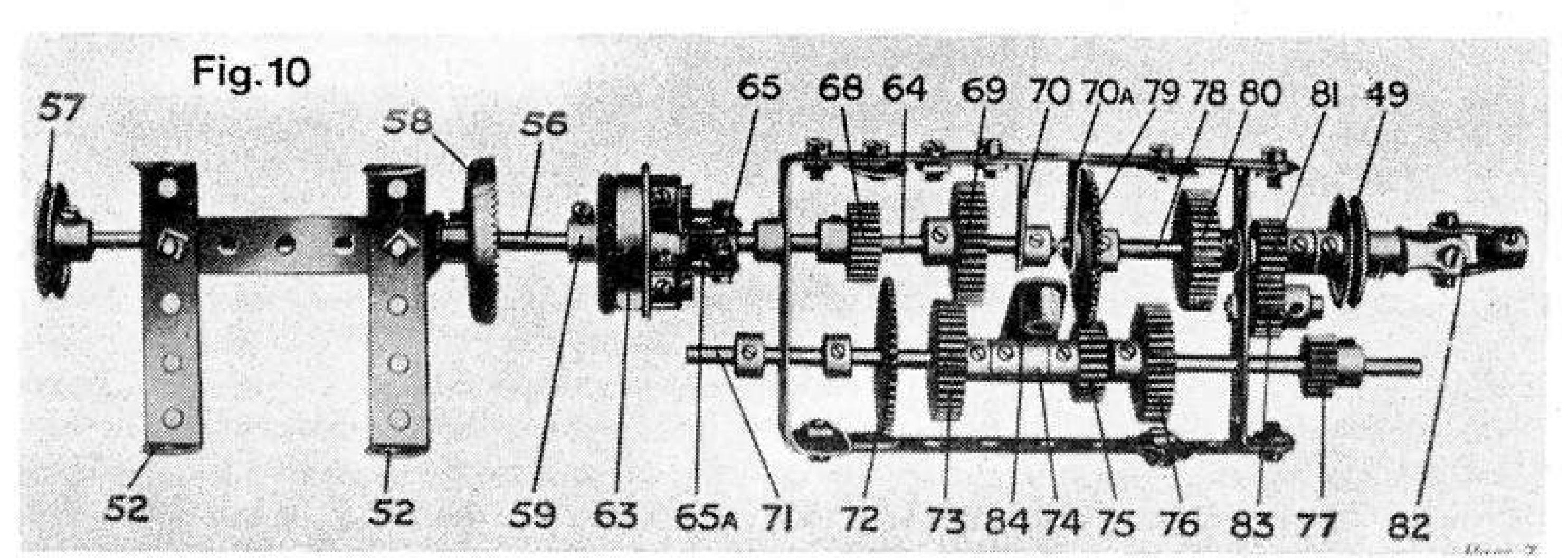
#### GEARBOX

The gearbox provides three speeds forward, neutral and reverse gears. It is built up from two 4½" Strips connected together at the front end by a 2½" x 1½" Double Angle Strip and, at the other end, by a 2½" x ½" Double Angle Strip. It is secured to Angle Girders 51 in the position shown by means of four Fishplates.

Rod 64, carrying the clutch member, represents the primary driving shaft. It is provided with a 34" Pinion 68 and a 1" Gear Wheel 69, and its inner end is journalled in a 1" x 1" Angle Bracket 70. The countershaft consists of a 6½" Rod 71, sliding in the end Double Angle Strips of the gearbox. This Rod carries, in order from left to right in Fig.11, two Collars (acting as stops to limit its sliding movement), a 50teeth Gear Wheel 72, a 1" Gear Wheel 73, two more Collars, one of which (74) is free on the Rod, a 34" Pinion 75, a 1" Gear Wheel 76 and a ½" Pinion 77. These parts should be secured carefully in the positions indicated in Fig. 10.

The driven 3" Rod 78 is journalled in the end Double Angle Strip of the Gearbox and in a second 1" x 1" Angle Bracket 70a. It carries a 50teeth Gear Wheel 79, a 1" Gear Wheel 80, a ½" Pinion 81, the brake Pulley 49 and a Universal Coupling 82. A Washer should be placed between Pinion 81 and the Double Angle Strip. Pinion 81 is in constant mesh with

Fig. 10, a plan view of the 3-speed-and-reverse gearbox and friction clutch.



## "Past Masters"

Continued from Page 51

another ½" Pinion 83, free to rotate upon a ¾" Bolt secured to the end Double Angle Strip by two Nuts.

A standard Meccano Bolt passes through the elongated hole of Crank 84, is fitted with a Nut and then screwed into the threaded bore of Collar 74. The Nut is secured tightly against the Collar in order to prevent the bolt shank fouling Rod 71 and also to ensure that the Crank is quite free to pivot on the Bolt. The Crank is secured to a 2" Rod 85 journalled in Angle Brackets bolted to Angle Girders 51 of the power unit, and a Coupling secured to this Rod carries the gear-change lever 86. It will be seen that the lever moves in a quadrant constructed from two 2½" Curved Strips bolted one on each side of 1" x 1" Angle Brackets secured to the top of the power unit. The Curved Strips are spaced away from each other by the thickness of the supporting Angle Bracket and one Washer placed on each connecting Bolt. In this way, the Curved Strips are caused to apply a certain pressure to lever 86, sufficient to hold the lever firmly in position after each change of gear is effected.

To mount the power unit in the chassis, the radiator is first removed by unscrewing Strip 7a on which it is mounted. Bolt 86a is removed from the gear-change lever quadrant and 5" Rod 87 is drawn out. The power unit is now positioned and the end holes of Strip 53 are bolted to the Reversed Angle Brackets 88, after which Rod 87 is replaced, passing it through holes E, F and G of the motor and power unit frame. Collars on Rod 87 are next screwed tight against the power unit and Bolt 86a is replaced in the gear lever quadrant. (This Bolt was removed merely to obviate the necessity of removing Rod 42 which passes through the centre of the quadrant.) The radiator is then replaced and the Cord 46 of the foot brake is secured in the position previously described.

#### DIFFERENTIAL GEAR

Construction of the differential frame will be obvious from Fig.11. The two 2½" x 1½" Double Angle Strips shown in this illustration may also be seen in Fig.7, but in the latter case, they are shown bolted to Wheel Flanges 26 and 26a incorporated in the back axle casing. When the gear is ready to assemble, the

differential frame (formed by the 2½" x 1½" Double Angle Strips and 3" Strips 26b) should first be incorporated in the fixed back axle, after which the gearing should be placed in the frame and the shafts 27 and 28 inserted in their respective positions. It will be noticed a Washer is placed beneath the head of the Bolts at each corner of the differential frame, this being to prevent the shanks of the Bolts fouling the sides of the Wheel Flanges.

The back axle shaft is in two sections, 27 and 28. The former consists of a 3" Rod and the latter of a 4½" Rod and a 2" Rod connected end-to-end by a Coupling, as shown. The inner ends of shafts 27 and 28 are journalled in opposite ends of a Coupling 89, in the centre tranverse hole of which is secured a 2" Rod 93 that carries two free-running 7/8"

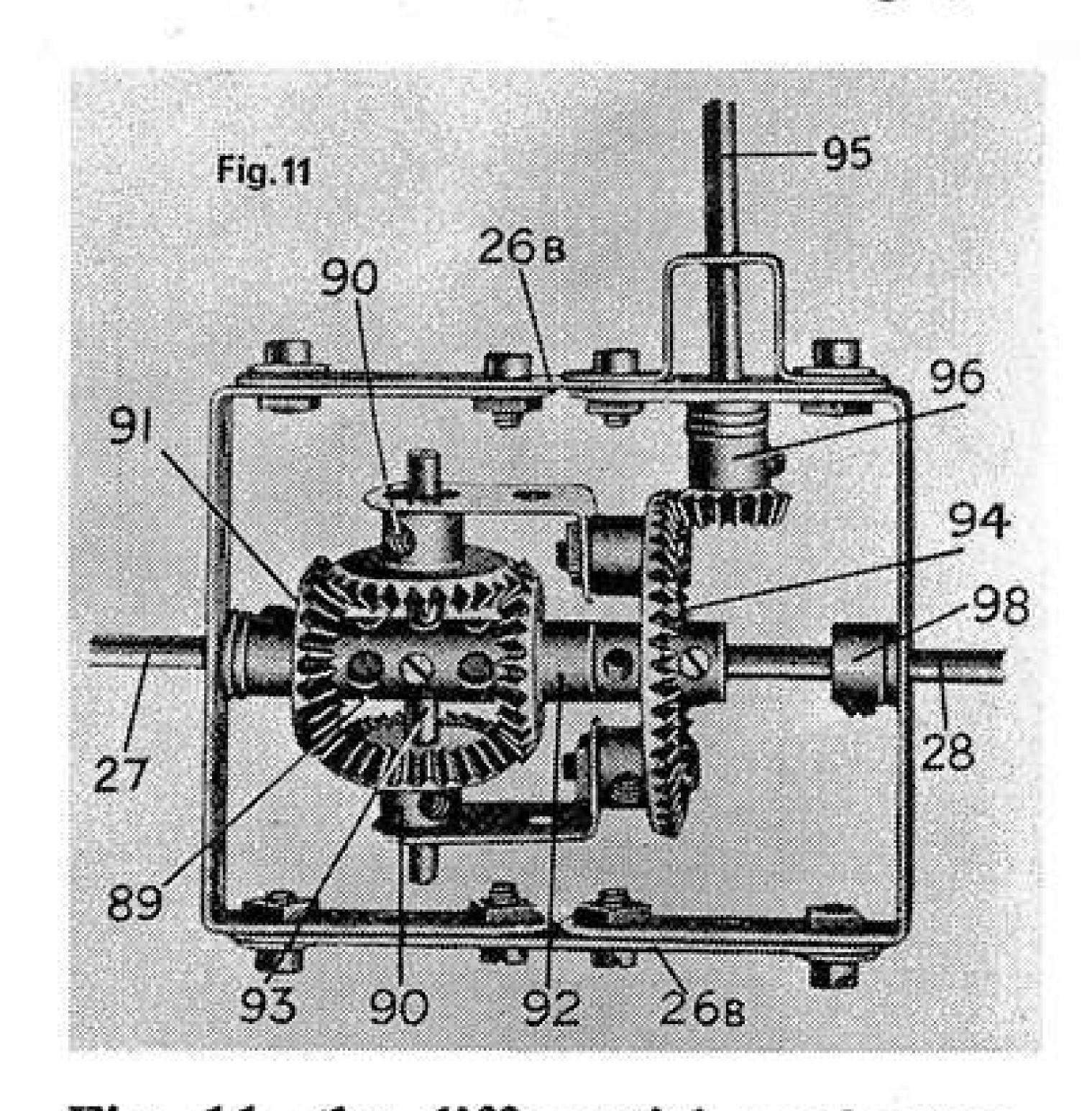


Fig. 11, the differential mechanism.

Bevel Gears 90. These Bevels engage with two similar Bevels 91 and 92 fixed on shafts 27 and 28, respectively.

The outer ends of the 2" Rod carrying Bevels 90 are passed through the elongated holes of 1" x ½" Angle Brackets, the latter secured rigidly by ½" Bolts to opposite holes in a 1½" Bevel Gear 94, from which they are spaced by Collars on the fixing ½" Bolts. Bevel Gear 94 is free to revolve on shaft 28.

The propeller shaft consists of 3½" Rod 95, one end of which is secured in Universal Coupling 82 and the other end, after passing through a Double Bent Strip and the side of the differential frame, is secured in a ½" Bevel Gear 96, engaging with Bevel 94. Two Collars 98 are secured to shaft 28 in the position shown to keep the various Gears in correct alignment and to prevent Gears 94 and 96 from slipping or binding against each other. A Washer should be placed between outer Collar 98 and the Double Angle

Strip of the differential frame, and two Washers should be placed between the boss of Bevel Gear 91 and the frame.

Care should be taken to see that the various parts of the differential gear work quite freely and that the several Bevel Gears are all placed in the correct positions in relation to each other. Everything should operate smoothly and easily when shafts 27 and 28 are twisted between thumb and finger, whether simultaneously and in the same direction, or separately and in the opposite direction.

#### ELECTRICAL CONNECTIONS

For those constructors adhering to the original specifications, the leaflet text is as follows:

All that now remains to complete the model is the wiring between the motor, dashboard switch, and the accumulator. Either the Meccano 8 amp or 20 amp accumulator may be used, but the former is of a more convenient size. As previously pointed out, it may be mounted on the luggage carrier at the rear of the model.

One wire should be led direct from the motor terminal to one terminal of the accumulator, and another wire should be led from the second motor terminal to a 6BA bolt 99 secured to the dashboard. This bolt is insulated from the 5½" Curved Strip of the dashboard by means of a Meccano Insulating Bush and Washer. The switch handle consists of a Threaded Pin secured to a Fishplate 100, which is attached to the dashboard by another 6BA bolt. An ordinary metal washer should be placed on each side of the Fishplate, but the bolt is insulated from the dashboard by means of an Insulating Bush and Washer. A wire secured to its shank is led to the second terminal of the accumulator. The motor is started by sliding Fishplates 100 over the head of bolt 99, thus completing the electrical circuit.

Coming back to the present day, if a different motor to that described is used (up to 20 Volts), the same bare chassis connection for one lead may be used from a transformer. However, this switching dashboard arrangement must not be used if a mains motor (115-240) volts is employed to drive the model.

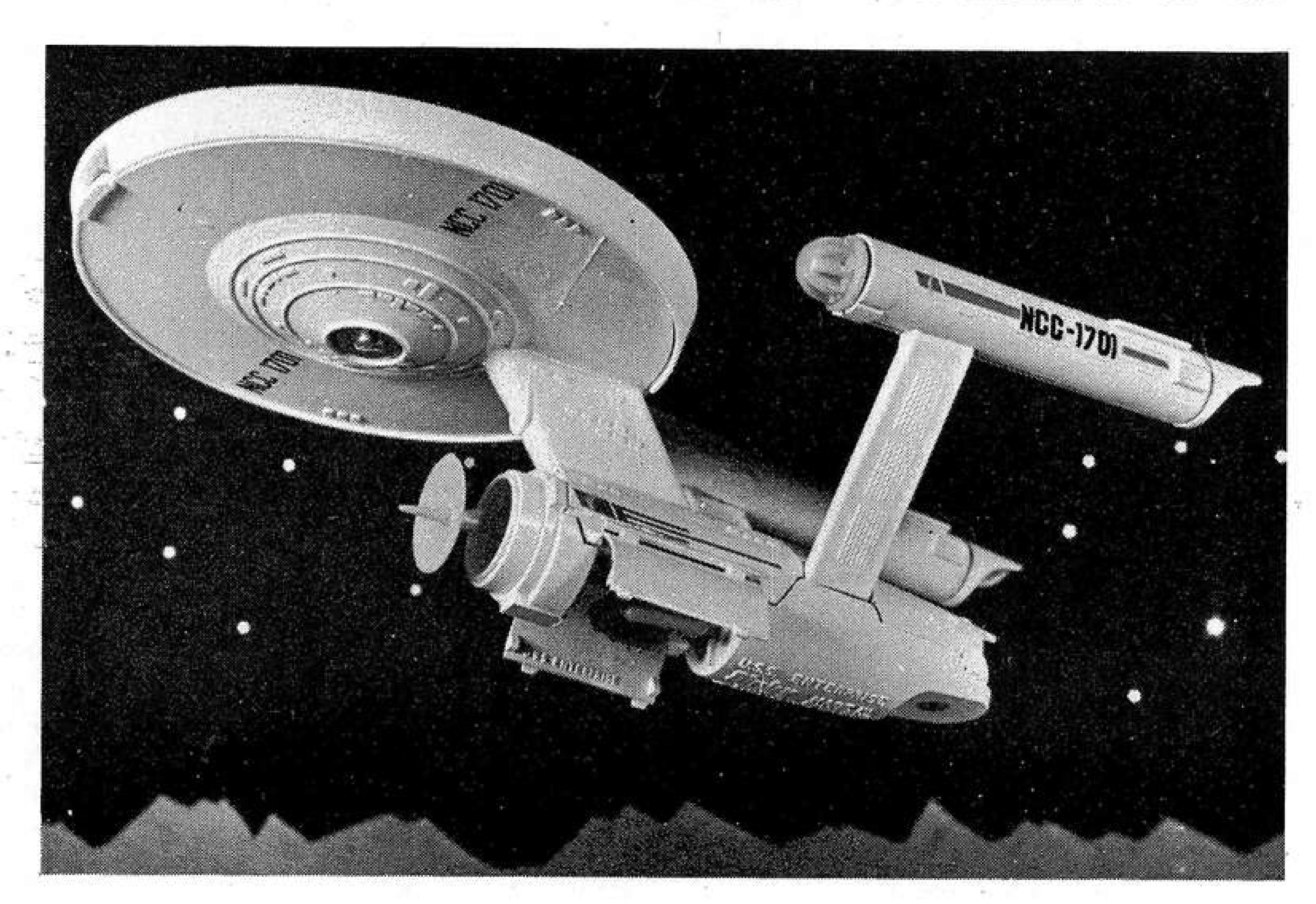
#### PART LIST

The complete list of parts required to build the Meccano Motor Chassis was given in Part 1 of this article, published in the January MMQ.

A look at the new Dinky Toy models released since the last issue of "Meccano Magazine Quarterly".

Right, No. 358 U.S.S. Enterprise from the tremendously popular television science fiction series, "Star Trek". Features include twin opening hatch covers in the lower body, allowing access to a moulded Shuttlecraft carried inside, and a unique missile-firing mechanism in the large disc-shaped upper body. Five small plastic discs, representing 'photon torpedoes', are loaded through an aperture in the top of the body and are fired by turning the spaceship's bridge, on top of the body. The Enterprise has an overall length of 234mm. and is finished in white with orange radar dish and engine pod nose-cones, red side flashes and black identification lettering.

# DINKY TOYS NEWS





Left, No. 696 Leopard Anti-Aircraft Tank - possibly the finest Dinky Toy armoured vehicle ever made! Die-cast in strong zinc alloy, the model features an amazingly welldetailed body casting, a pivotting dishtype radar scanner representation, a pivotting representation of a radar gun sight, twin whip-type aerials and working crawler tracks. It also features a detailed, rotating gun turret complete with a pair of firing longbarrelled anti-aircraft guns, one each side of the turret, which are linked so that they elevate in unison. The guns are cocked by pushing their barrels inwards, and are fired by pressing a button at the side of each gun breech. Produced to 1/50th. scale and measuring 152mm. in length, the model is finished in a dark green semi-matt enamel and comes complete with German Army decals.

Right, No. 211 Triumph TR7 — a Dinky Toy version of the very latest Leyland sports car, most recent in the long line of famous "T.R.'s" which stretch right back to 1952. So new is the real TR7, in fact, that it has not yet been seen on the roads of Britain or Europe; all production to date has been shipped to America! The Dinky version features a highly-detailed body casting, opening doors and moulded window, seats and dashboard. Of special interest is a brand new and totally unique die-cast model feature in the shape of simulated impact-absorbing bumpers. Produced to 1/42nd scale and measuring 96mm. in length, the TR7 is finished in metallic turquoise green with a light grey interior.



#### LET YOUR MODELS LIVE

Continued from page 39

can be achieved. If your model is powered from a transformer or from a remote battery pack, the method is simply thus:

First of all, switch off at the power supply (mains or battery pack). Engage the power drive to the movement required and switch on the motor. (Nothing will happen as yet because there is no power supplied to the motor.) Start filming and immediately switch on the power source. When the movement is complete switch off at the power source and stop the camera. Now disengage the power drive and engage the drive to the next movement. Start the camera and switch on the power supply, and so on ...... By ensuring that the model is started up as soon as the camera starts running, and the camera stops as soon as the model stops, a smooth transition from one movement to the next is ensured. The camera must meanwhile be firmly located so that it cannot move during filming and while power drives are being disengaged or engaged. If the camera moves while you are changing from one drive to the next, the result will be a "jump cut" on the screen when the film is projected. In other words, the model will make a sudden inexplicable jerk. So keep that camera firmly fixed on a stand or a tripod.

Careful placing of the model and choice of camera position will enable the power supply lead to be concealed from view. Models that are not fitted with a motor do not have this problem of concealing the lead. Not all models are motor driven and not all motor-driven models have all their movements powered. However, with a cine camera your model will still come alive! All the movements can spring to life, and non-powered models can come alive by means of a technique known as "animation." This is a subject which warrants a detailed explanation, and will be dealt with at length in a future issue of MMQ.

#### LOGGING WINCH AND SLED

Continued from page 41

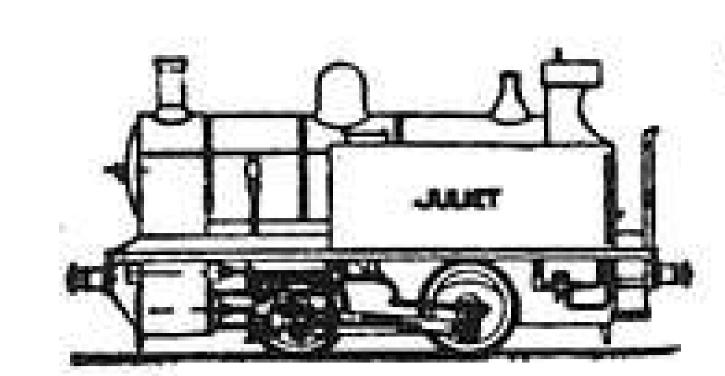
The pulley block is also very simple. Space a pair of 2½" Strips 16 at one end with a 3/8" Bolt fitted with three lock nuts and insert the Hook at the other end. Two outside lock nuts on another 3/8" Bolt are used to hold the Hook if it is required to swivel, but it may be fixed tightly, if preferred, in the normal way. Mount a 1" loose Pulley in the centre holes of the 2½" Strips on a 1" Axle Rod, a Washer being placed inside the pulley block on either side of the 1" Pulley. Spring Clips hold the Axle Rod in place. Adjust the lock nuts to make sure that the Pulley runs freely without any sign of binding.

#### OPERATING THE MODEL

Ideally the model should be placed on a kitchen table with a smooth top (such as Formica etc.) which will give maximum "slide" to the sled and will enable the little Magic Motor to pull surprising loads. If a smooth table top is not available, a hardboard door panel is also ideal, laid on the floor or supported at table height. By untying the cord from the Fishplate anchorage, it may be passed round the 1" loose Pulley at the winch and tied to the top of the pulley block to give even more hauling power and the model will provide hours of fun.

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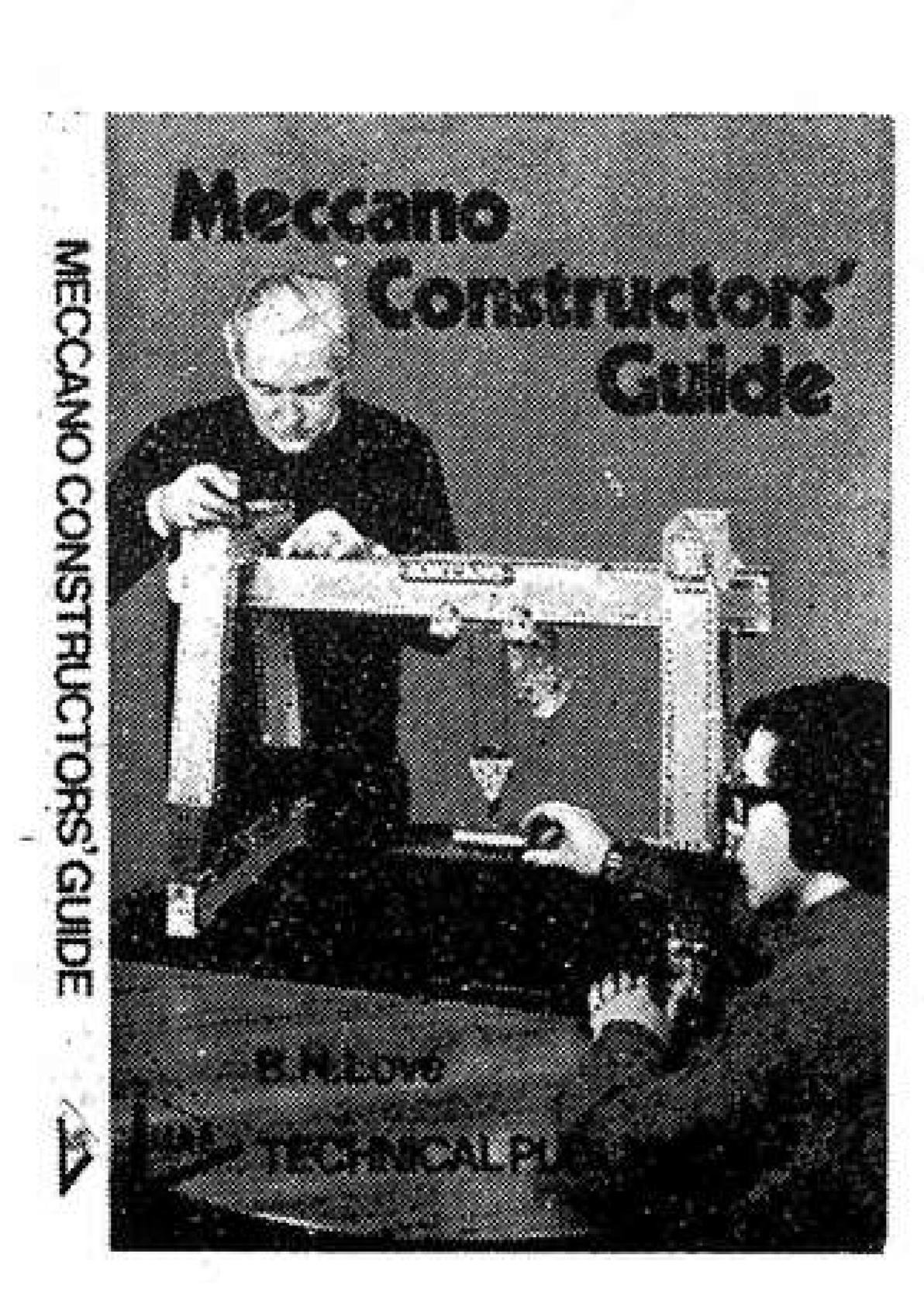
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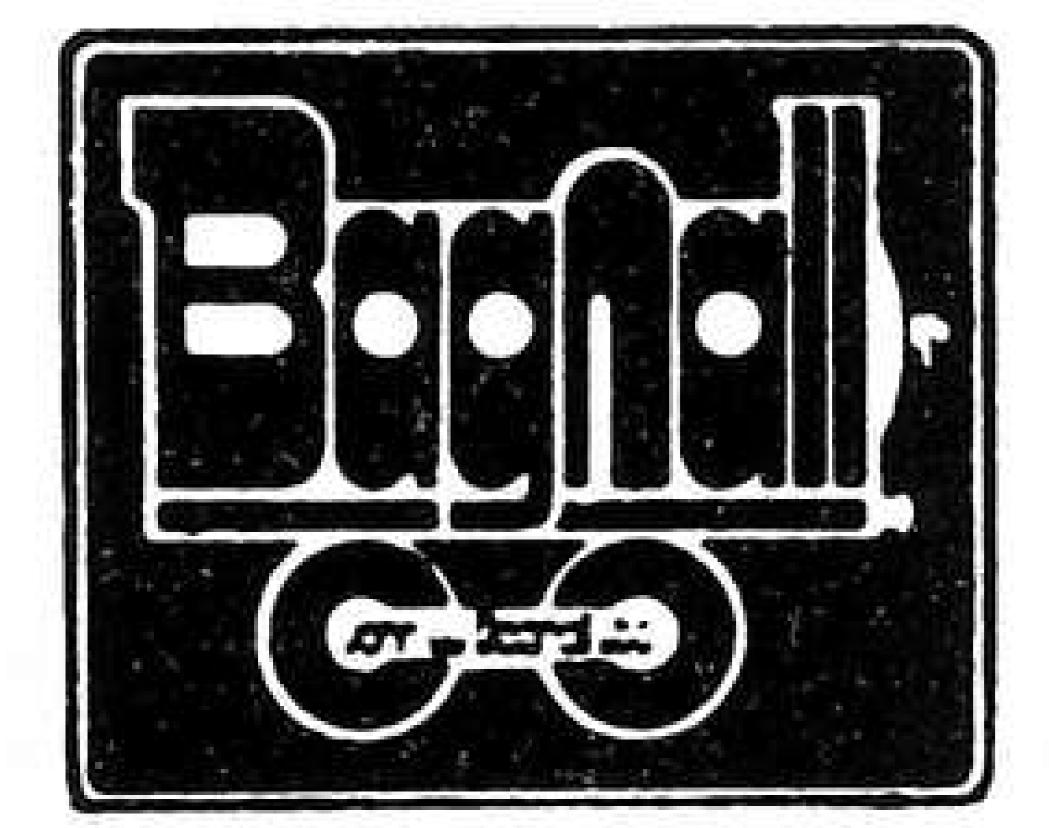
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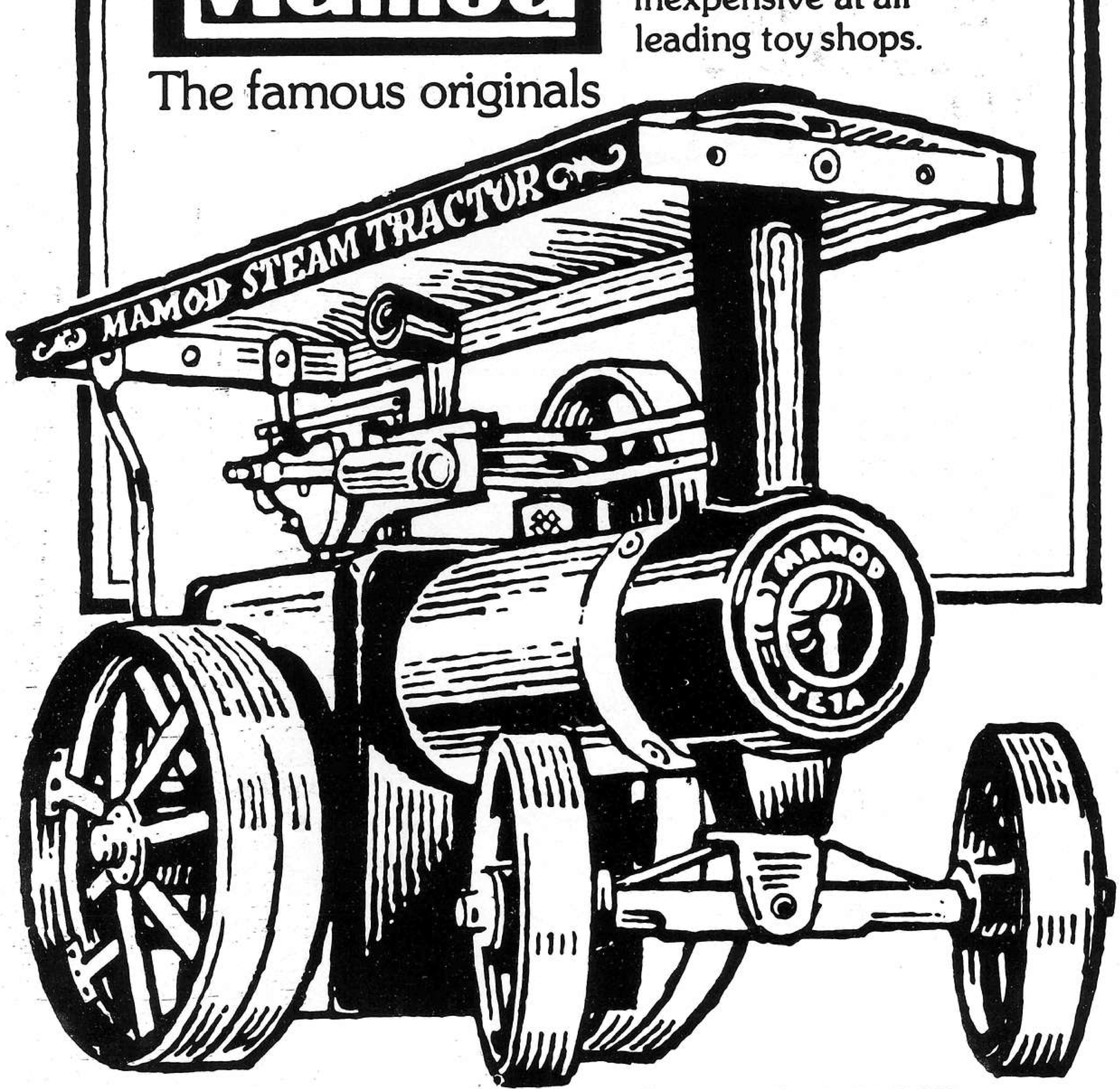
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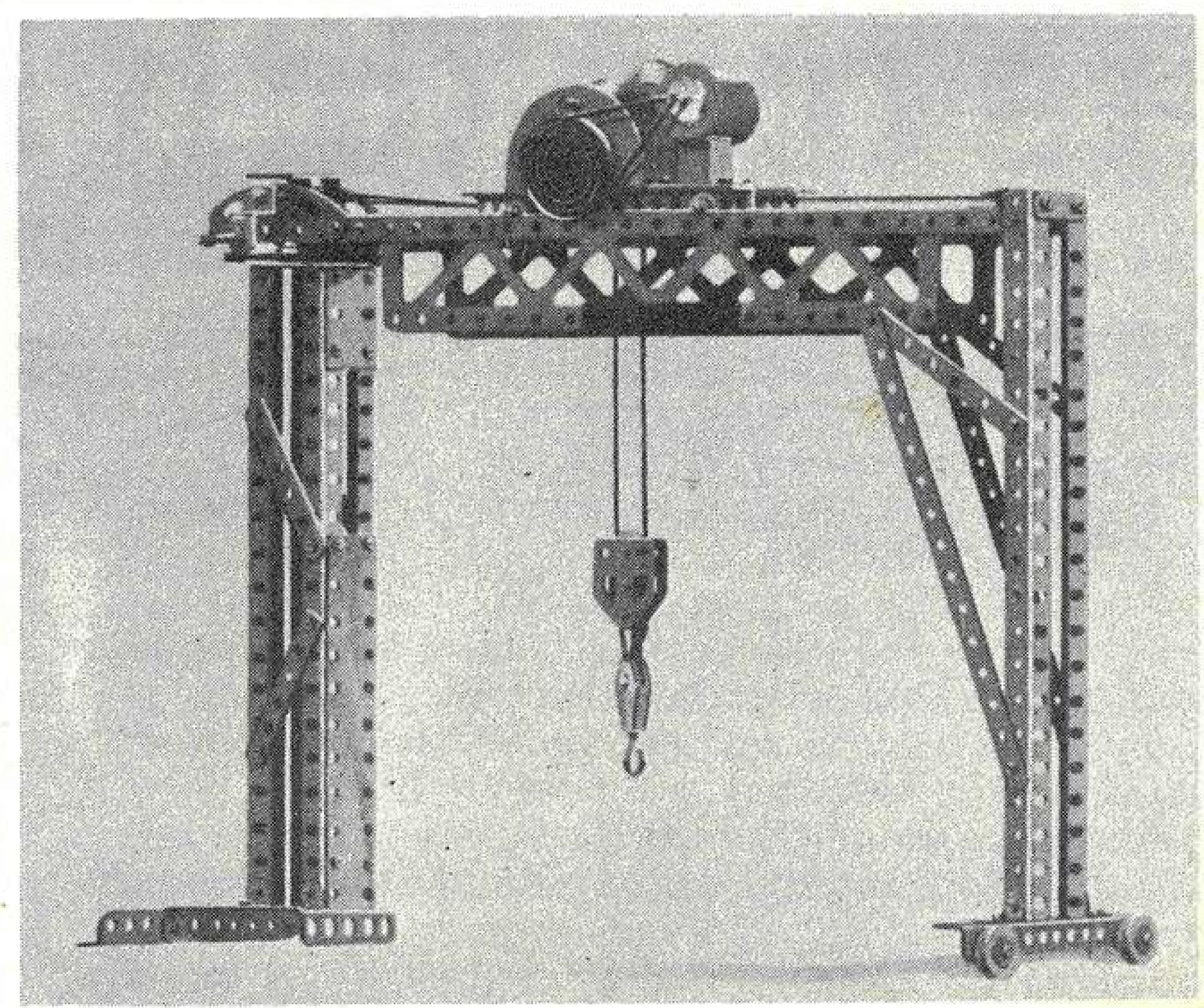


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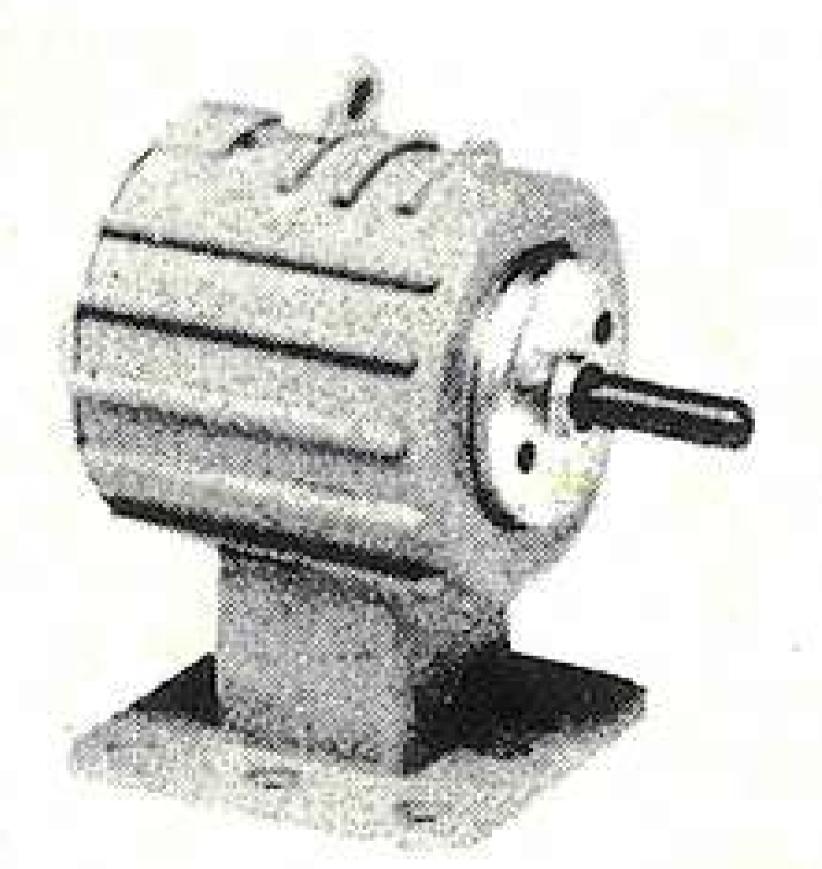
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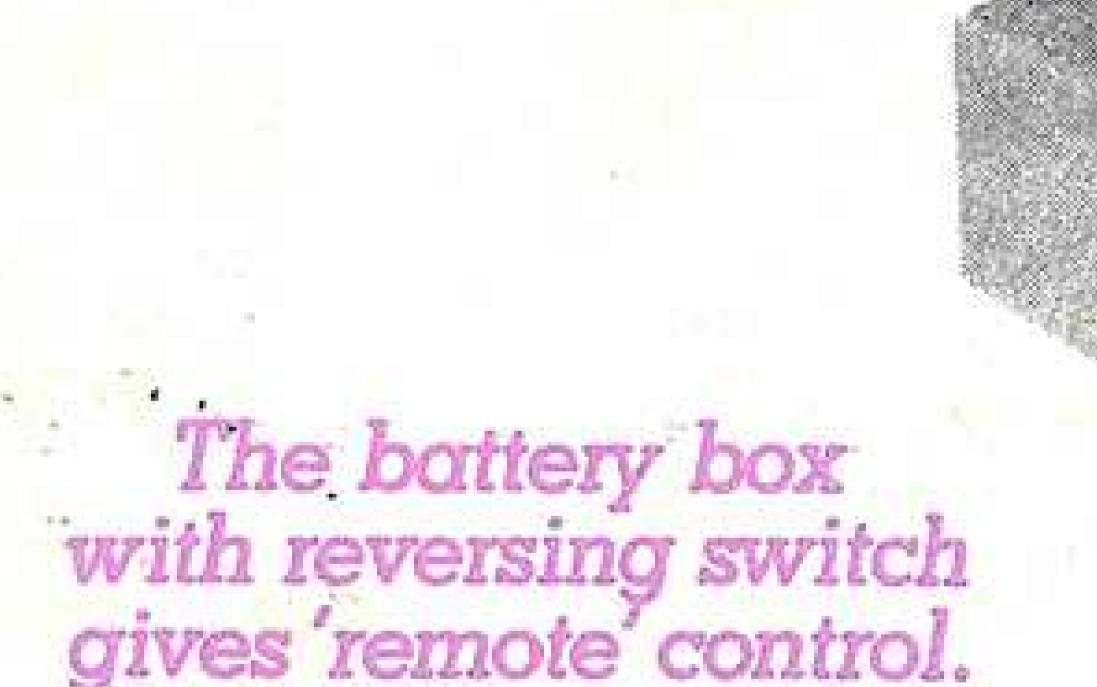
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